

DIFFERENCE OF TOTAL RAINFALL IN 1880 FROM THE AVERAGE 1870-79.



The round dots indicate a rainfall within 10 per cent. of the average.
The + and - respectively show excess or defect of between 10 and 25 per cent.
The same signs enclosed by a ring indicate a departure from the average of more than 25 per cent.

BRITISH RAINFALL, 1880.

ON

THE DISTRIBUTION OF RAIN

OVER THE

BRITISH ISLES,

DURING THE YEAR

1880,

AS OBSERVED AT MORE THAN 2000 STATIONS IN
GREAT BRITAIN AND IRELAND,

WITH ARTICLES UPON VARIOUS BRANCHES OF RAINFALL WORK.

COMPILED BY

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ERRATA IN BRITISH RAINFALL, 1879.

- Page [4].—Babbacombe. The remarks from Babbacombe for 19th and 23rd were intended to refer to 20th and 24th.
- „ [56].—Seven lines from bottom (Babbacombe), *for 24th read 4th.*
- „ [65].—Third line from top, *for 1852 read 1872.*
- „ [113].—Douglas, I. of Man, Rainfall in April 2·11 *not* 2·18, and in the year, 41·09 *not* 41·16. The total is given correctly on p. [165].
- „ [149].—Stamford (Barn Hill Ho.) ; total rain *should be* 24·26 *not* 23·26.
- „ [154].—Rawtenstall (Clough Bridge Res.) ; total rain 45·78 *not* 47·49.
- „ [154].—Burnley (Gawthorpe Hall) ; total rain 36·12 *not* 34·22.
- „ [164].—Newton (Caersws) ; total rain 35·11 *not* 35·77.
- „ [182].—Burford *should be* 25·99, and Market Drayton 30·35.
-

ERRATA IN BRITISH RAINFALL, 1880.

- Pages [137] and [174].—Taylor's Gill ; total rain 144·40 *not* 134·40.

P R E F A C E.

THE present volume begins the third decade of systematic rainfall publication, and, like a birthday, suggests reflections concerning the past.

The contrast between the four pages for 1860 and the 260 pages of the present volume, great as it is, is not so great as the change in the nature of the information given both as to quality and extent.

As regards quality ; not merely have instruments been improved, and observers supplied with rules aiming at rigorous uniformity, but they are required to forward their returns in much fuller detail than in the early years, and the records are submitted to an amount of critical examination which I do not think any one except my assistants and myself realizes. Perhaps I ought to make an exception of two or three observers whose returns having been proved faulty have been cross thereat. Happily, this is a rare frame of mind, and the staff is now large enough for us to lose with equanimity the services of the very few who esteem their own *amour propre* of greater importance than accuracy.

As regards extent ; the development has two distinct branches—

(1) The details given for each station are now very full ; there is the chronicle of the weather, there are notes of heavy falls in very short periods, details of very wet days, details of monthly fall, and ample particulars as to the relation of the year to the average of previous years. Not a trace of any one of these subjects, except the last, is to be found in *British Rainfall*, 1860.

(2) The number of stations was 168, which was nearly double the number ever before collected together. The present volume contains records from 2,114 stations for 1880, or more than twelve times the original number. I am glad to find that out of those 168 earliest correspondents, 60 still remain among the contributors.

I am myself sometimes astonished at the magnitude of this amateur

organization, without either State aid, magniloquent title, managing council or pecuniary resources except the voluntary contributions of the staff—a staff, whereof the members rarely see one another, and still more rarely see their chief, who reside in all parts of the country, from the Channel Islands in the South to the Shetlands in the far North, and from County Kerry in the South-West of Ireland to the Eastern-most verge of England at Lowestoft; who include nearly every social grade from peer to peasant; and yet who (with exceptions so rare that they take me by surprise) work with a regularity and heartiness which is beyond praise. Why do they do it? Minor motives may have some influence, but I believe that the leading sentiment which binds together British Rainfall observers is the consciousness that they are helping gradually to store up a mass of information which is, and will yearly become increasingly, valuable to the nation at large—in relation alike to Agriculture, Sanitation, and the proper appropriation of the water supply of the British Isles.

G. J. SYMONS.

62, CAMDEN SQUARE, LONDON, N.W.

June 10th, 1881.

REPORT.

THE work of the past year has been unusually heavy, not merely in consequence of the gradual growth of the organization, but because in addition to the regular routine two separate and very heavy series of tables have had to be prepared.

Ordinary Routine.—Although it may seem somewhat purposeless to repeat what has been stated in previous volumes, yet it must be remembered that it is certain that this volume will fall into the hands of many persons who have not read the previous ones, hence a certain amount of repetition is necessary. As regards the ordinary routine of the office, the mass of *General Tables* at the end of this work is perhaps the best exponent of its nature—not the extent of the tables alone, or indeed chiefly, but that which is less easily ascertained, their quality. And by the word quality I desire to express many things. The quality of a set of tables depends, in the first place, upon the absence of errors. Astonishment is often expressed that this work does not appear until nearly six months after the expiration of the year to which it refers, but if those who think it tardy, could but spend a day or two in watching the system of checking which is adopted, they would share my opinion, that considering the limited staff, and the exhaustive examination which the records undergo, the noteworthy feature is that it is all done within less than six months. As regards the verification of the casting of several hundred of the daily register forms, I am this year indebted to two of my observers, Mr. J. Alexander, formerly of Sudbury, and Mr. Slade, C.E., of Leamington,—jointly their labours must have saved us nearly a hundred hours' work. In connection with the *Meteorological Magazine*, with the maintenance of records in mountainous parts of the British Isles, and on certain watersheds, I receive monthly returns from about 250 stations, say altogether about 3000 such returns. All these are not only checked each month when received, but they are also compared with the abstracts sent from the same stations at the end of the year. Moreover, many returns are sent to the Meteorological Council, and to the Meteorological Society, and about 80 records are printed quarterly by the Registrar-

General of Scotland. All these separate records are individually compared with the returns sent direct to myself, and in every case of discrepancy the observer is applied to and questioned as to the source of error. This exhaustive examination not merely benefits my own work, but it removes errors from that of the other authorities, at, however, the price of very heavy correspondence, of an occasional growl on the part of some observer who does not value accuracy so highly as I do, and, though last by no means least, at the price of considerable delay.

Besides all this checking, there is of course a heavy amount of copying in order that all the statistics may be kept in perfect order and available at any time for any purpose. Add to this the keeping of complete records of all changes arising from removals and deaths on the one hand, and from the establishment of new stations on the other hand, and it will readily be understood that, with a staff of about 2200, this branch of work is not light.

As to the correspondence, it is far too great to be regularly counted, but I am inclined to put total documents received at nearly 15,000 per annum, and the issues at quite that number—of course both these include returns and printed forms—the total number of letters and written post cards issued is probably about 4,000 per annum.

A considerable amount of time is also consumed in the preparation of this work, and of the *Meteorological Magazine*, in the examination of rain gauges, both previous to purchase and *in situ*, and in keeping myself thoroughly acquainted with what is being done in rainfall matters, both in Europe and in other parts of the globe.

Extra Work. Royal Society.—It will be remembered that from the very commencement of my rainfall work, now nearly a quarter of a century since, I adopted as a desirable system the use of decennial periods, such as 1840-9, 1850-9, &c. One of these periods closed on January 1st, 1880, and as during it the observations have been far more numerous and accurate than during any previous one, I was naturally anxious that the results should be fully worked out. I therefore applied for and obtained a grant from the Royal Society to defray the cost of temporary assistance in this matter. The whole of the arithmetical work is completed, and as soon as this volume is published, I intend to personally complete the discussion of the results. Meanwhile the averages for 1870-79, at nearly 200 stations, have been utilized in the formation of the comparison table in the present volume, as fully explained on a subsequent page.

Extra Work. Meteorological Council.—The extent to which it is possible for me to publish the rainfall data already collected and worked out is very seriously limited by the very great cost of printing masses of figures—I possess, *in manuscript*, rainfall statistics of an extent far beyond what almost any one would credit, but the mere printing in abstract would cost at least £1000, irrespective of the cost of preparing for press and of proof reading. Hence it is, that many things which I should like to bring forward remain unseen, and in that respect are not available to the public, not because they are not done, but because they are too costly to print.

This digression has been suggested by the subject which I have great pleasure in mentioning. The Meteorological Council—the body, that is, which administers the national grant for meteorological purposes—has recently been issuing reports intended especially to promote the study of meteorology in connection with agriculture. For this purpose it is evidently of the greatest importance that accurate knowledge of the average *monthly* rainfall should be obtainable. This led to negotiations between the Council and myself which eventuated in my undertaking to supply tables containing the rainfall in every month for fifteen years, ending with 1880, at between 300 and 400 stations, together with certain averages deduced therefrom. This was a very heavy undertaking, it involved the copying and verification of about 70,000 separate entries, and the adding and averaging of nearly 20,000 columns of figures. Happily, however, it is in a very forward state, and I trust that when it is published it will be considered equally worthy of the office which pays for it, and of the much smaller establishment which has done the work.

Finance.—This is a subject upon which, notwithstanding the kindness of the great majority of my correspondents, I am always reluctant to write. The present arrangement, whereby the observers themselves mainly defray the cost of the preparation and publication of their own work is not altogether right, and my own position in connection with it is somewhat anomalous. At present nearly all the strength of myself and my little staff is required to keep current records in perfect order—and we can do but little towards discussing the records of bygone years. If, therefore, the rainfall data of the past already in existence, and mostly already classified in my manuscript volumes, are to be completed and worked up during my life time, considerable additional funds must be obtained. Whether this work would be best done by a development of the present semi-private

organization, or by the establishment of a Government office, as suggested in the very able article on River Floods, in the number of the *Edinburgh Review* for April, 1881, is not quite certain—but that it ought to be done is, I think, indisputable.

The following list of subscribers is rather shorter than that in the last volume, but on the other hand some of the amounts are larger, so that the total is nearly the same. It still seems a pity that so much of the cost should fall on so small a portion of the total staff, but it must be remembered that of the 2000 observers many are in the humble walks of life, and, as I have before mentioned, some dozens of the gauges are kept by paid observers.

LIST OF ALL SUMS OF £1 AND UPWARDS RECEIVED IN PAYMENT
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Reade, T. M., Esq., C.E.	1	12	0	Wigram, J. R., Esq.	1	0	0
Rendell, Rev. A. M.	1	0	0	Wildgoose, R. W., Esq.	1	6	0
Rendlesham, Rt. Hon. Lord ...	3	0	0	Wilkin, F., Esq.	1	1	0
Reynolds, L. W., Esq.	1	1	0	Williams, Rev. W. W.	1	0	0
Ridout, Rev G.	1	0	0	Wilson, Thomas, Esq.	1	7	0
Rigby, J., Esq.	1	1	0	Wingfield, Rev. C. L.	1	0	0
Roberts, I., Esq., F.G.S.	1	0	0	Woodhouse, A. J., Esq.	2	0	0
Robertson, H., Esq., M.P.	2	7	0	Woollams, Mrs.	1	6	0
Robinson, J., Esq.	1	7	6	Woollett, G. C., Esq.	1	0	0
Robson, J. W., Esq.	1	5	0	Wortham, H., Esq.	1	10	0
Rylands, T. G., Esq.	1	4	0	Wragge, C. L., Esq.	1	1	0
Scott, J. W., Esq.	2	2	0	Wright, P. Esq.	2	0	6
" Mrs. Russell	2	2	0	Yool, H., Esq.	2	2	0
Selby, B. P., Esq.	1	0	0	Young, W. B., Esq.	1	5	0

[Subsequent receipts will be acknowledged monthly in the *Meteorological Magazine*. Cheques should be crossed National Bank, and Post Office Orders drawn on Camden Road, London, N.W.]

DIFFERENCE OF RAINFALL WITH ELEVATION.

BEING THE RESULTS OF EXPERIMENTS MADE AT WOODSIDE,
HERSHAM, SURREY.

Lat.	50° 21' 40" N.
Lon.	0° 24' 40" W.
Altitude	52 ft.

By G. DINES, F.M.S.

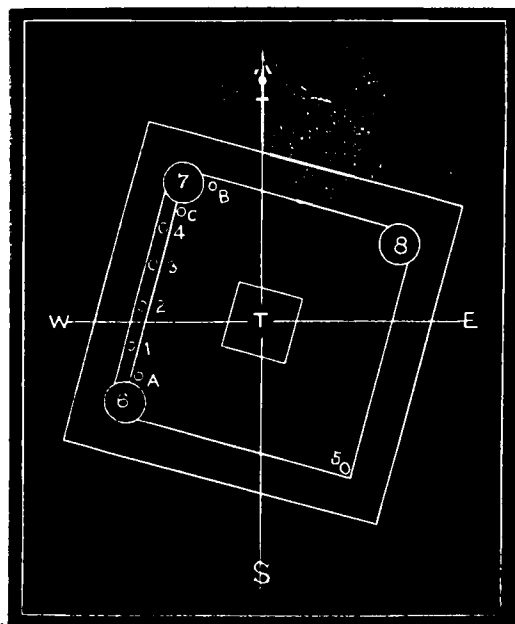
IN the *British Rainfall* for 1878 I gave some particulars as to the amount of rain collected near the ground, and also of that collected in gauges placed in different positions upon a tower 50 ft. high. The conclusions then arrived at have, to a great extent, been confirmed by the analysis of my figures given by Mr. Rogers Field, C.E., in the *Meteorological Magazine* for August, 1878, by the observations* made at Philadelphia, U.S., in 1834, and again by Mr. Walker's observations on the Shot Tower at Chester (see *British Rainfall* for 1879, page 35).

My intention now is to throw some light upon the question left undecided in my former paper, as to the effect which the size of the gauge may have had upon the amount collected at that elevation. For this purpose, at the commencement of 1880, two 5 in. gauges were placed at the points A and B, as near as possible to the 24 in. gauges, but so as to prevent any insplashing from one to the other.

A view of the top of the tower, and a plan showing the gauges then at work, will be found as the frontispiece to *British Rainfall*, 1877, but the following will enable anyone to follow the modified arrangements. As there was not room for all the necessary lettering, the following numbers have now been used :—

* Exhumed by Mr. Symons, and republished in *British Rainfall* for 1878.

- 1, 2, 3, 4.—Series of 5 in. gauges, now discontinued.
 5.—5 in. gauge at S.E. corner, now discontinued.
 6.—24 in. gauge at S.W. corner.
 7.—24 in. gauge at N.W. corner.
 8.—24 in. gauge at N.E. corner, now discontinued.
 A, B, C.—5 in. gauges first used during 1880 and 1881.



The amount collected in the different gauges for the year 1880 was as follows:—

	8 in., 4 ft.		On Tower, 50 ft. above Ground.					RATIOS.			
	AMOUNTS.						Ground gauge = 100.				
	above Ground.	24 in. S.W.	5 in. A.	24 in. N.W.	5 in. B.		24in. S.W.	5in. A.	24in. N.W.	5in. B.	
	in.	in.	in.	in.	in.						
Jan.....	0·364	...	0·294	0·299	0·315	0·299	...	81	82	87	82
Feb. ...	2·127	...	1·598	1·699	1·885	1·729	...	75	80	88	81
March...	0·443	...	0·266	0·290	0·362	0·321	...	60	66	82	73
April ...	1·911	...	1·769	1·744	1·950	1·819	...	93	91	102	95
May ...	0·289	...	0·263	0·234	0·268	0·244	...	91	81	93	84
June ...	2·406	...	2·237	2·140	2·242	2·168	...	93	89	93	90
July ...	4·419	...	4·196	4·197	4·681	4·320	...	95	95	106	98
Aug. ...	0·602	...	0·552	0·530	0·595	0·548	...	92	88	99	91
Sept. ...	4·986	...	4·423	4·505	5·001	4·549	...	89	91	100	91
Oct. ...	6·034	...	5·174	4·954	5·221	4·502	...	86	82	86	75
Nov. ...	1·802	...	1·360	1·328	1·458	1·354	...	76	74	81	75
Dec. ...	2·939	...	2·492	2·543	2·856	2·477	...	85	86	97	84
	<u>28·322</u>		<u>24·624</u>	<u>24·463</u>	<u>26·834</u>	<u>24·330</u>		<u>85</u>	<u>84</u>	<u>93</u>	<u>85</u>
Or as	100		86·9	86·4	94·8	85·9					

I do not intend to discuss the conclusion arrived at in my former paper, but must call attention to one circumstance connected

with the preceding table. On looking at the rainfall for the different months, it will be seen that the 24 in. N.W. gauge, during the six months (April to September, inclusive) collected 14·737 in. against 14·613 in. collected by the ground gauge. The difference, therefore, in the amount collected by these two gauges occurs chiefly in the winter months, when strong wind is most prevalent.

The results as given in the table are rather perplexing, and not easy of explanation. On looking to the 24 in. S.W. and 5 in. A gauges, the quantity of rain collected is nearly the same, while the 24 in. N.W. and 5 in. B differ by $2\frac{1}{2}$ inches.

If we suppose the 5 in. gauges to collect less rain in proportion than the 24 in., the equality between the first two gauges may be accounted for by their different positions. The smaller gauge is on the lee side of the larger one, when the wind blows from the south and south-west, and, according to my previous observations, is in a position to collect the greater quantity of rain; but these remarks will not apply to the 5 in. B gauge, and I could only surmise that the wind eddying round this gauge might affect it differently to the other 5 in. gauge. To test this, the 5 in. A gauge was, at the commencement of the year 1881, placed at C, with the following results :—

	8 in. Grd. in.	24 in. N.W. in.	5 in. C. in.	5 in. B. in.	RATIOS. Ground gauge = 100.		
Jan.	1·063	0·461	0·566	0·492	...	43	53 46
Feb.	2·492	2·126	2·036	1·912	...	85	82 77
March	1·619	1·501	1·417	1·354	...	93	88 84
April	0·451	0·406	0·362	0·382	...	90	80 85
To May 12.	0·306	0·274	0·253	0·272	...	89	83 89
	5·931	4·768	4·634	4·412			

In this table the rainfalls for January and February include two rather heavy falls of snow, which, owing to the inclement state of the weather, I was unable to take at the time, and they thus became mixed with an after fall of rain; the quantity which really fell cannot be ascertained, but the amount in the different gauges was as follows :—8 in. ground, 0·773 in. and 0·814 in.; 24 in. N.W., 0·165 in. and 0·601 in.; 5 in. C, 0·286 in. and 0·636 in.; 5 in. B, 0·222 in. and 0·519 in. After deducting these amounts from the figures given in the table, the totals remaining are as follows :—8 in. ground, 4·344 in.; 24 in. N.W., 4·002 in.; 5 in. C, 3·712 in.; 5 in. B, 3·671 in. Here, again, the effect of the wind is apparent; one of the small gauges collected a greater quantity of the snow and

rain than either of the other two gauges, to which it was in close proximity.

The object I had in view, viz., to determine the cause of the difference in the amounts collected by the 24 in. N.W. and 5 in. B gauges, has not been attained. The snow which, to a great extent, rendered the observations of January and February useless, has been followed by a long spell of dry weather. I hoped by continuing these observations as long as your time of publication would allow, to come to some definite conclusion on this one point; but this must now be deferred till further observations are obtained.

As to the effect of the size of the gauge on the amount collected, looking at all the figures given in the tables, there is a strong probability that on an exposed place, like the tower where these observations have been made, a 5 in. gauge will not collect so much rain in proportion as a larger one, but the amount of difference, whatever it may be, will be a difficult matter to determine.

G. DINES.

Woodside, Hersham, Surrey, May 18th, 1881.

ON THE AMOUNT OF RAIN COLLECTED AT VERY CONSIDERABLE HEIGHTS ABOVE THE GROUND.

IN various articles in previous volumes we have considered the relation between the amount of rain collected at heights ranging from 1 ft. to 25 ft. above the ground.

In the present article we purpose bringing together some of the instances in which simultaneous records have been kept on the ground, and on adjacent buildings *not less than 65. ft high*.

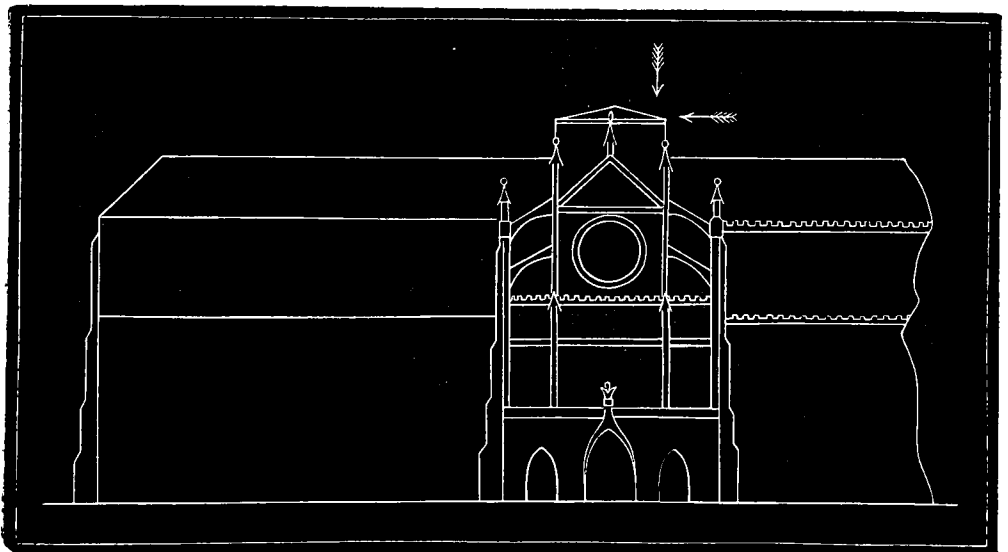
In order to give an approximate idea of the diversity of the positions in which these high gauges have been placed, we have given sketches of several of the buildings, drawn to the uniform scale of 1 inch for 100 feet. The arrows point to the presumed, or known, position of the mouth of the rain gauge.

The earliest series of this kind was that started in 1766 by Dr. Heberden, F.R.S., who kept records of three rain gauges.

- (1.) In a garden near Westminster Abbey.
- (2.) On the roof of a house near the same.
- (3.) On the square tower of the same.

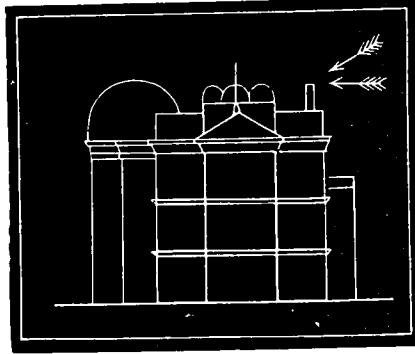
The results for 1766 are given in the following table :—

Gauges.	Heights.		RAIN.	
			Depth.	Ratio.
Garden	1 ft. ?	...	22·61	... 100
House top.....	30 ft. ?	...	18·14	... 80
Abbey Tower	151 ft.	...	12·10	... 54



WESTMINSTER ABBEY (EASTERN PORTION AND DWARF CENTRE TOWER.)

Since 1817 readings from two gauges, each 30 in. in diameter, have been regularly registered at the National Observatory, Paris. One, with its receiving surface about 6 ft. above the ground, is in the court-yard; the other on the roof of the Observatory, 88 ft. 7 in. above ground.



NATIONAL OBSERVATORY, PARIS.

Converting the values as given in Prof. Raulin's *Observations Pluviométriques*, Bordeaux, 1876, into English measures, and then working out the ratios, we get the following results:—

				RAIN.	
Gauges.		Heights.	Depth.	Ratio.	
1821-30	{ Court	6 ft. 7 in.	21·73	...	100
	{ Roof	88 ft. 7 in.	19·63	...	90
1831-40	{ Court	6 ft. 7 in.	23·03	...	100
	{ Roof	88 ft. 7 in.	20·05	...	87
1841-50	{ Court	6 ft. 7 in.	24·72	...	100
	{ Roof	88 ft. 7 in.	20·84	...	84
1851-60	{ Court	6 ft. 7 in.	22·72	...	100
	{ Roof	88 ft. 7 in.	20·49	...	90
1861-70	{ Court	6 ft. 7 in.	19·90	...	100
	{ Roof	88 ft. 7 in.	19·10	...	96

It will be noticed that these values show that the difference between the upper and lower gauges, even on the average of successive periods of ten years, is far from uniform. We cannot explain the difference between a decrease of 10 per cent. in 1821-30, and one of 16 per cent. in 1841-50. But the diminution of the decrease to 4 per cent. in the decade 1861-70, which is even more remarkable, admits of a simple explanation. The National Observatory has immediately adjoining it on the West a Monastic establishment, in the garden of which a row of poplars was planted—they grew so tall as to shut off the rain from the lower gauge, and thus made it collect very little more than the one on the roof. That this was the cause was evident to anyone who saw the trees; complete proof would involve the discussion of other Parisian observations; but, even the above table indicates that the fault is probably in the ground gauge, because the mean of the ground gauge for 40 years, 1821-60, was 23·05 in.,

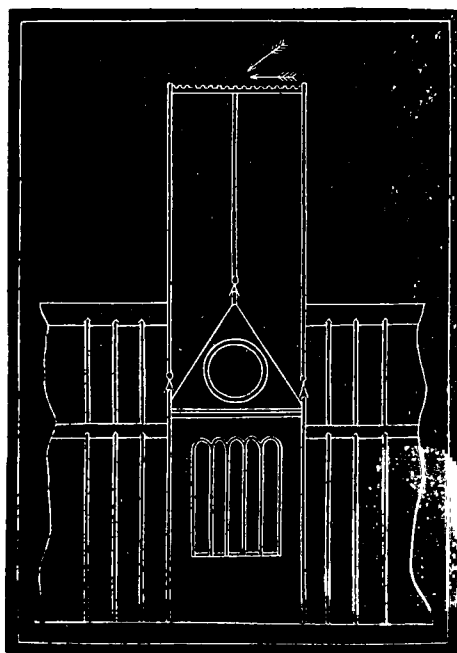
and for the ten years, 1861-70, only 19·90 in., a decrease of 3·15 in., while the roof gauge only decreased from 20·25 in. to 19·10 in., a decrease of only 1·15 in. We, therefore, ignore the observations of the last decade, and accept the previous 40 years, viz. :—

Gauges.	Heights.	Depth.	RAIN.	
			Ratio.	
1821-60. Court	6 ft. 7 in. ...	23·05 ...	100	
Roof.....	88 ft. 7 in. ...	20·25 ...	88	

The next set was made by Prof. Phillips, F.R.S., at York, from 1832 to 1835. One gauge was in the garden of the York Museum ; another was on the roof of the Museum ; and the third was on a pole 9 ft. above the battlements of the great tower of York Minster.

The following are the results for the three years. (Thirty-six months, though parts of the four civil years, 1832-35) :—

Gauges.	Heights.	Depth.	RAIN.	
			Ratio.	
Garden	2 in. ...	21·81 ...	100	
Museum roof	44 ft. ...	17·39 ...	80	
Minster Tower.....	213 ft. ...	12·99 ...	60	



YORK MINSTER (CENTRE TOWER).

For ten years, 1844 to 1853, Dr. J. Fletcher Miller, F.R.S., observed a gauge on the top of St. James's Church, Whitehaven, synchronously with the one in his garden in High Street, Whitehaven, with the following result :—

Gauges.	Heights.	Depth.	RAIN.	
			Ratio.	
High Street, Garden..	6 ft. ...	43·53 ...	100	
St. James' Church ...	78 ft. ...	31·39 ...	72	

Between 1861 and 1866 two sets of observations were made by Mr. W. H. Pim, at Monkstown, near Dublin. Both gauges were 10 in. square ; one was in a garden, but we are not aware on what style of building the upper gauge was, but as it was 90 ft. above the ground, it was probably a tower of some kind.

The mean results were :—

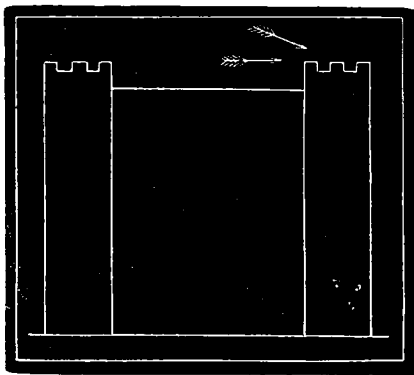
Gauges.	Heights.	Depth.	RAIN.	
			Ratio.	
Garden	6 in. ...	30·00 ...	100	
Upper Gauge	90 ft. ...	19·74 ...	66	

During nine months (April to December) of 1862, the late Mr. John Davis, of Derby, observed the fall monthly upon the top of the tower of All Saints' Church, Derby, which by comparison with his regular record in the vicinity, gave the following results :—

Gauges.	Heights.	Depth.	RAIN.	
			Ratio.	
Ground	5 ft. ...	20·57 ...	100	
All Saints' Tower ...	174 ft. ...	17·61 ...	86	

From 1862 to 1868, Mr. H. J. Poulter, of Dover, had a gauge on the top of the keep of Dover Castle. Up to 1863, however, one of his gauges was incorrect. We detected the error on inspecting the station, September 26th, 1863, and subsequently had both gauges made perfect. One was kept in the garden in Castle Street, the other was, during the whole of 1864, placed on the N.E. turret of the keep. From 1865 to 1868 it was placed on the S.W. turret. We give separately the values for the one year and for the four years.

Gauges.	Heights.	Depth.	RAIN.	
			Ratio.	
Garden	1 ft. ...	23·04 ...	100	
Keep N.E.	99 ft. ...	10·83 ...	47	
Garden	1 ft. ...	33·22 ...	100	
Keep S.W.	99 ft. ...	12·33 ...	37	



DOVER CASTLE (KEEP).

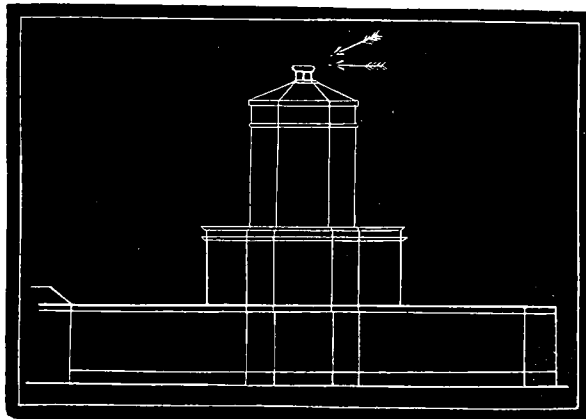
During three years, 1866 to 1868, the late Mr. Lund, Engineer to

the Sheerness Water Works, had two gauges at work, one on a grass plot within the Water Works, and the other on the top of the Water Works tower, 67 ft. above the ground. The mean results were :—

Gauges.	Heights.		RAIN.	
			Depth.	Ratio.
Ground	1 ft.	...	22·49	100
Tower	67 ft.	...	12·16	54

For several years a gauge has been kept on the centre tower of the Radcliffe Observatory at Oxford, but sometimes the upper and sometimes the lower gauge has been out of order. Hence we have been obliged to take the average of such years only as were perfect, viz., 1870 to 1874, 1876, 1877, and 1879.

Gauges.	Heights.		RAIN.	
			Depth.	Ratio.
Garden	11 in.	...	25·65	100
Tower	112 ft.	...	15·71	61



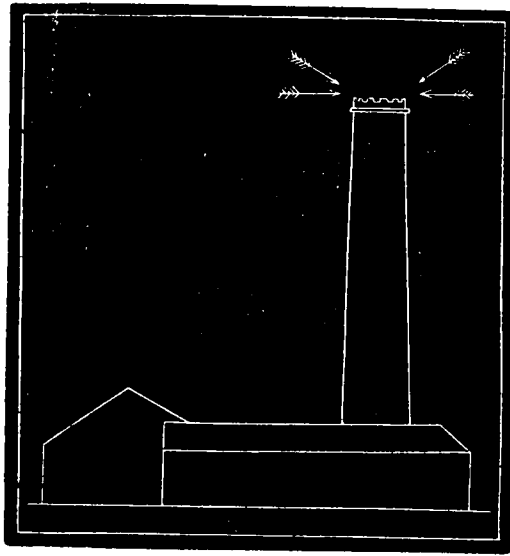
RADCLIFFE OBSERVATORY, OXFORD.

Mr. A. O. Walker, F.L.S., F.M.S., placed in the year 1878 a gauge, of which the orifice was 1 ft. 9 in. above the battlement of the shot tower of Chester Lead Works, and 160 ft. above the adjacent ground. Mr. Walker had already a gauge in the garden of his residence, close to the works, and he had observations taken daily by both gauges.

Both for 1878, and for 1879, he was good enough to forward copy of the daily readings of both gauges, and also of the prevalent direction of the wind. We partially reduced both sets of observations, but this work necessarily contains such masses of numerical data, that we hesitated as to printing all these values in extenso. Meanwhile, there had appeared in *British Rainfall*, 1877, Mr. Dines's account of the results of the gauges at the corners of the tower of

his house ; and in the *Meteorological Magazine*, Vol. XII., p. 99, Mr. Field's discussion of these observations ; wherein he showed that the results were extremely accordant, and proved that, with any given prevalent direction of wind during rain. the gauge on the tower on the windward side would collect much less than that on the leeward side ; and that the latter would not infrequently collect as much rain as, or even more than, fell upon the ground.

The extreme height of Mr. Walker's shot tower (160 ft.), seemed to render it advisable to make the observations there complete, and to ascertain whether at that great height there was any difference between the windward and leeward sides. We therefore suggested to Mr. Walker the desirability of erecting a third gauge on the opposite side of the tower ; to this he at once acceded, and added another ground gauge in an adjacent field. During the greater part of 1880 a complete record has been kept of the readings of the two tower gauges, and of the field one, as well as of the direction and force of the wind, by Mr. W. Sloane, the manager of the works.



CHESTER (SHOT TOWER).

The record of the old ground gauge has been kept by the gardener as before ; but it has not been used in the following investigation.

We may, in the first place, give the totals for the two years.

	Garden gauge. Field gauge.		W.S.W. Amount.	Tower gauges.		
	Amount.	Amount.		E. Amount.	W.S.W. Ratio.	E. Ratio.
1879.....	30·04	...	17·60	...	59	...
1880.....	32·64	...	21·90	...	67	...
1880 (10 mos.) ...	30·34	30·97	23·89	21·32	69	70

This shows that the fall on the top of the tower is, on the average, about one-third less than on the ground.

For the purpose of discussing the observations of the last ten months of 1880 (when all the gauges were in use), we have sorted out the whole of the observations according to the prevalent wind ; but it must be remembered that in the absence of a simultaneous self-recording anemometer and rain gauge, this classification of the daily rainfall under certain wind-points cannot be nearly perfect. It would take several pages to print these tables, and owing to the above-mentioned uncertainty, it is perhaps hardly necessary, and therefore we give only the following summary :—

RAIN GAUGE EXPERIMENTS, CHESTER, 1880.

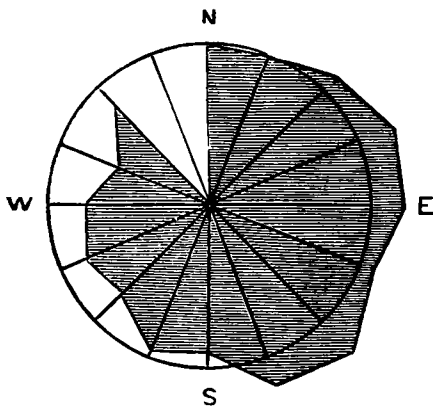
RAINFALL.

		TOP OF SHOT TOWER.					
Description of gauge	Field.	E.	WSW	E.	WSW		
Height above ground	1 ft.	160 ft.	160 ft.	160 ft.	160 ft.		
Height above sea ...	67 ft.	227 ft.	227 ft.	227 ft.	227 ft.		
Direction of Wind.	Depth. in.	Depth. in.	Depth. in.	Ratio.	Ratio.	East gauge +	West gauge +
W.S.W.	1·65	1·12	·92	56	37	19	...
W.	1·68	1·10	·86	64	40	24	...
W.N.W.	2·01	1·46	·66	68	28	40	...
N.W.	3·62	2·67	2·21	66	43	23	...
N.N.W.	No	instance	of	Rain	with	this	Wind.
N.	·59	·30	·39	39	42	...	3
N.N.E.	·06	·02	·02	33	33	0	0
N.E.	2·11	1·80	1·86	72	86	...	14
E.N.E.	3·58	1·97	2·92	44	66	...	22
E.	1·27	·67	1·13	50	73	...	23
E.S.E.	·60	·44	·53	74	89	...	15
S.E.	1·80	1·09	1·38	42	68	...	26
S.S.E.	1·87	1·15	1·36	57	67	...	10
S.	2·98	1·83	2·01	54	45	9	...
S.S.W.	2·14	1·81	1·68	76	71	5	...
S.W.	4·56	3·61	2·77	73	51	22	...
Calm and variable...	·31	·23	·19	85	58	27	.
Totals and ratios }	30·83	21·27	20·89	...	...	...	...
thereof }	100	69	68	...	...	...	...
Means	...	...	...	60	62	...	...

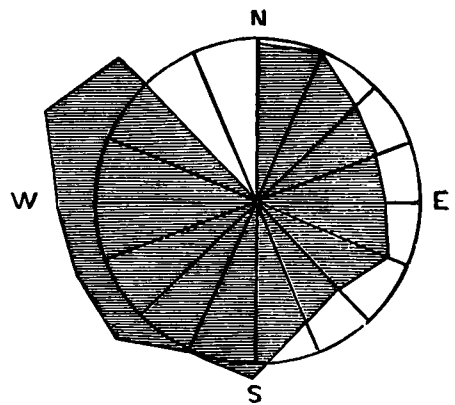
In spite of the defects which we have already mentioned, it will be seen that every group falls in with the following rules :—When the wind is W. or any compound thereof, the E. gauge collects more than the W.S.W. one.

When the wind is E. or any compound thereof, the W.S.W. gauge collects as much as, or more, than the E. one.

This result is shown by the two following diagrams, wherein the shaded portion shows the ratio of excess in each gauge, the circle representing perfect agreement, whence it is very evident that no matter from which side the wind and rain come, the largest amount is always found in the gauge furthest from the wind. When the wind is from N. or S., or near those points, the two tower gauges are under nearly identical conditions, and then they agree very closely.



W.S.W. GAUGE.

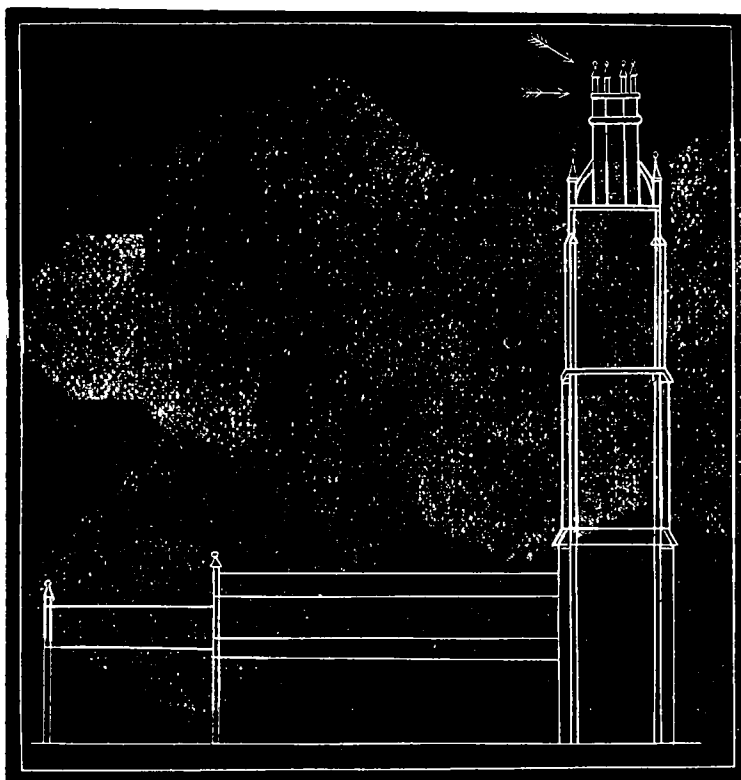


E GAUGE.

As specimens of what prevails with individual falls we have taken out all those which exceeded half an inch in the lower gauge, and in the following table have placed them in three groups:—Those which ought to have given (1) most in the E. gauge; (2), most in the W.S.W. gauge; (3), equal amounts in both. It will be seen that all fairly comply with the conditions, and some come out remarkably well.

Date.	Wind.	Field.	Amount.		TOWER. Ratio.		E +	W +
			E.	W.S.W.	E.	W.S.W.		
July 12.....	S.W. 2	·55	·48	·46	87	83	4	...
Nov. 16.....	S.W. 10	·54	·43	·27	80	50	30	...
Dec. 23.....	W.S.W. 6	·63	·49	·45	78	72	6	...
TOTAL		1·72	1·40	1·18				
October 27..	E.N.E. 5	1·60	1·03	1·52	65	95	...	30
October 4...	E. 6	·95	·55	·88	58	93	...	35
August 7 ...	E. 8	1·45	·88	1·14	61	79	...	18
July 26.....	E.S.E. 4	·60	·44	·53	74	89	...	15
TOTAL		4·60	2·90	4·07				
May 26.....	S.S.W. 2	1·23	1·12	1·04	91	85	6	..
May 30.....	S.S.E. 3	·65	·44	·49	68	75	...	7
July 17.....	N.W. 2	·69	·62	·55	90	80	10	...
July 14.....	N.E. 1	·84	·74	·83	88	99	...	11
TOTAL		3·41	2·92	2·91				

During the year 1880 a series of observations has been made by Mr. E. C. Hackford, of Boston, which is remarkable, as being at a greater elevation above the ground than any previously made—50 ft. higher than those made on the centre tower of York Minster.



BOSTON CHURCH.

The church of St. Botolph, Boston, Lincolnshire, founded A.D. 1309, is well known as a very fine specimen of an English parish church. It is 305 ft. 8 in. long, 98 ft. 4 in. wide; the nave is 70 ft. high, and the tower, to the top of the pinnacles, is no less than 272 ft. 6 in. The lower portion of the tower is closed by a groined arch, 140 ft. above the pavement; the roof of the bell-chamber is 30 ft. higher, or 170 ft. above the ground, and thence upwards the tower is hollow. The gauge is 90 ft. above the leads which form the roof of the bell-chamber, and above everything except the eight pinnacles at the angles of the octagon. As the diameter of the octagon is 27 ft., and the height of the pinnacles (which of course end in points) is only 12 ft. above the mouth of the gauge, their influence upon the amount collected is probably very

small. The following table gives the monthly values during eleven months of 1880 :—

**RAINFALL IN THE CHURCHYARD AND ON THE TOWER OF
BOSTON CHURCH, LINCOLNSHIRE.**

Lat. 52° 59' N. Lon. 0° 3' W.

GROUND GAUGE :—

5 in. diam.
3 ft. above ground.
22 ft. above sea.

TOWER GAUGE :—

5 in. diam.
260 ft. above ground.
282 ft. above sea.

1880.	Ground Gauge.	Tower Gauge.	Ratio Ground=100.
	in.	in.	
February	1·78	·55	31
March.....	1·27	·51	40
April	2·52	1·17	46
May	1·14	·66	58
June	3·88	2·35	61
July	5·84	4·04	69
August	2·29	1·70	74
September	4·77	} 7·03	46
October	6·91		
November	1·82		
December	1·89		
TOTAL	34·11	18·01	53

We hope that during 1881 Mr. Hackford will be able to at least empty the gauge on the first of each month, so that the months may be kept separate. The above table shows no important deviation from the usual rule of the difference being much less in summer than in winter, which variation, as has already been repeatedly shown in these volumes, is due to two causes—the greater prevalence of wind during the winter half of the year, and the fact that lofty gauges retain scarcely any snow.

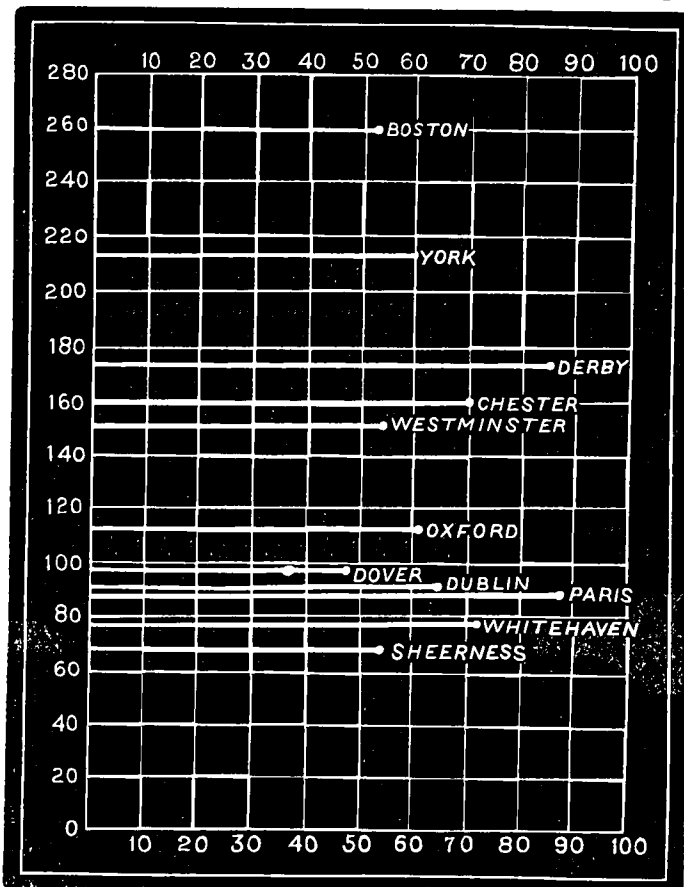
We understand that Mr. Hackford has occasionally examined the gauge at short intervals, in order to see whether the same general relation exists in individual rains as in monthly totals, and has found such to be the case. We hope that he will continue to do so, endeavouring to obtain the totals of tolerably heavy rains, both during calms and with high winds, and favour us with the records *in extenso*. The former class of observations, heavy rains in time of calm, are very much wanted; they will be the times of the least relative difference between the two gauges, and the values for the month of August, 1880, induce us to think that some very important facts might be obtained, if such individual observations could be made.

SUMMARY.

We now proceed to collect together the results of these numerous observations, and thus form the following table, in which the values are arranged according to the height of the upper gauge above the ground.

Station.	Height of Upper Gauge above ground.	Ratio of fall.
Boston.....	260 ft.	53
York	213	60
Derby	174	86
Chester, E.....	160	70
„ W.S.W. ...	160	69
Westminster	151	54
Oxford.....	112	61
Dover, S.W.	99	37
„ N.E.	99	47
Dublin.....	90	66
Paris	89	88
Whitehaven	78	72
Sheerness	67	54

These values are also represented in the following diagram, in which the horizontal lines show the proportion of the amount of rain collected at the various heights to that collected on the ground.



periments as follows, but the figures show that the broad general features of the structure have but little influence on the results.

Round Towers. —	Sheerness	67 ft.	...	54 ratio	} 65
	Chester, E.	160 ft.	...	70 „	
	„ W.S.W... ..	160 ft.	...	69 „	
Church Towers. —	Whitehaven	78 ft.	...	72 „	} 70
	Derby	174 ft.	...	86 „	
	Boston	260 ft.	...	53 „	
Large Buildings. —	Paris	89 ft.	...	88 „	} 58
	Dover, S.W.	99 ft.	...	37 „	
	„ N.E.	99 ft.	...	47 „	
	Oxford	112 ft.	...	61 „	
	Westminster.....	151 ft.	...	54 „	
	York	213 ft.	...	60 „	

Here also the Dover values come in to disturb the result, for if they were excluded from the last group, the mean ratio would be 66, so that the three groups would all be between 65 and 70, thereby showing that the general form of the building has no influence upon the amount of rain collected by the upper gauge.

To what then are we to look for the explanation of these variations? We believe them to be wholly due to the position of the gauge, to the configuration of that portion of the building which is close to the gauge, and to the strength and direction of the wind during times of rain.

THE RATE AT WHICH RAIN FALLS.

BY BALDWIN LATHAM, C.E., M.INST.C.E., F.G.S., F.M.S., &c.

THE author having occasion, in connection with a series of observations on underground water, to observe at Croydon with accuracy the various periods when rain falls, devised the recording rain-gauge described in *British Rainfall* for 1878, page 48. From the records of this instrument Table I. has been prepared, which shows the rate at which rain has fallen at various periods during the two years ending the 31st March, 1881.

TABLE I.

Showing the Rate at which Rain Falls, from Experiments made at Nantwich House, Croydon, two years from March, 1879, to April, 1881.

Date	Time of day.	Quantity of rain falling.	Duration of fall.	Rate of fall in 24 hours.	Date.	Time of Day.	Quantity of rain falling.	Duration of fall.	Rate of fall in 24 hours.
1879.	Between	in.	min.	in.		Between	in.	min.	in.
April 7	4-5 a.m.	10	30	4.80	June 25	3-4 a.m.	10	30	4.80
" 16	3-4 a.m.	10	60	2.40	" 25	5-6 a.m.	13	30	6.24
" 20	9-10 a.m.	10	60	2.40	" 25	6-8 a.m.	25	60	6.00
" 25	8-10 p.m.	10	90	1.60	July 1	10-11 a.m.	15	60	3.60
May 1	6-7 p.m.	08	45	2.56	" 1	11-12 a.m.	10	60	2.40
" 6	6-8 p.m.	10	75	1.92	" 1	9-12 a.m.	30	135	3.20
" 15	10-11 p.m.	09	40	3.24	" 3	1-2 p.m.	07	10	10.08
" 23	2-3 a.m.	09	40	3.24	" 4	1-2 p.m.	05	10	7.20
" 25	5-6 a.m.	09	60	2.16	" 9	9-10 p.m.	09	30	4.32
" 28	1-3 a.m.	11	75	2.11	" 14	8-9 p.m.	12	30	5.76
" 28	10-11 p.m.	50	60	12.00	" 15	3-5 a.m.	16	60	3.84
" 28	11-12 p.m.	25	60	6.00	" 20	6-7 a.m.	13	60	3.12
" 29	2-3 a.m.	23	60	5.52	" 20	2-3 p.m.	40	30	19.20
" 28, 29	10 p.m.-3 a.m.	1.33	285	6.71	" 22	2-3 a.m.	08	40	2.88
" 31	0-2 p.m.	12	60	2.88	August 1	6-7 a.m.	06	20	4.32
June 1	7-9 p.m.	11	60	2.64	" 3	1-2 a.m.	09	15	8.64
" 2	7-8 a.m.	09	45	2.88	" 6	4-5 p.m.	05	20	3.60
" 2, 3	11 p.m.-1 a.m.	08	45	2.56	" 17	9-10 a.m.	11	60	2.64
" 6	1-2 a.m.	12	40	4.32	" 17	9-11 a.m.	20	120	2.40
" 7	6-7 p.m.	14	60	3.36	" 18	6-7 a.m.	10	60	2.40
" 7	5-8 p.m.	30	140	3.08	" 19	11-12 p.m.	05	20	3.60
" 11	4-5 p.m.	10	10	14.40	" 20	5-6 a.m.	10	60	2.40
" 12	11-12 a.m.	09	10	12.96	" 23	5-6 a.m.	10	60	2.40
" 16	9-11 a.m.	11	60	2.64	" 23	7-9 a.m.	20	90	3.20

Date.	Time of day.	Quantity of rain falling.	Duration of fall.	Rate of fall in 24 hours.	Date.	Time of day.	Quantity of rain falling.	Duration of fall.	Rate of fall in 24 hours.
		in.	min.	in.			in.	min.	in.
August 23	10-11 a.m.	·13	20	9·36	July 1	8-9 a.m.	·10	60	2·40
" 23	10-12 a.m.	·30	60	7·20	" 3	4-5 a.m.	·06	20	4·32
" 26	1-3 p.m.	·20	60	4·80	" 3	11-12 a.m.	·04	10	5·76
" 28	7-9 a.m.	·10	75	1·92	" 3	3-4 p.m.	·04	15	3·84
Sept. 8	10-11 a.m.	·03	5	8·64	" 7	3-4 p.m.	·08	20	5·76
" 9	1-2 p.m.	·11	30	5·28	" 9	9-10 a.m.	·03	15	2·88
" 13	4-6 p.m.	·13	40	4·68	" 10	7-8 p.m.	·13	5	37·44
" 14	3-4 a.m.	·12	60	2·88	" 26	6-7 a.m.	·08	40	2·88
" 23	0-1 p.m.	·08	20	5·76	" 26	8-9 p.m.	·06	30	2·88
" 23	5-6 p.m.	·10	60	2·40	" 28	11-12 p.m.	·05	45	1·60
" 24	2-3 a.m.	·18	40	6·48	" 30	6-9 a.m.	·75	180	6·00
" 24	2-3 a.m.	·23	60	5·52	Sept. 11	6-7 p.m.	·23	40	8·28
" 28	10-12 p.m.	·10	60	2·40	" 11	8-9 p.m.	·22	45	7·04
" 29	3-5 a.m.	·09	60	2·16	" 11	9-11 p.m.	·30	60	7·20
Oct. 1	4-6 a.m.	·12	60	2·88	" 13	0-3 p.m.	·32	150	3·07
" 24, 25	11 p.m.-1 a.m.	·16	60	3·84	" 14	0-2 p.m.	·10	30	4·80
" 24, 25	11 p.m.-1 a.m.	·10	30	4·80	" 14	10-11 p.m.	·10	10	14·40
" 25	0-1 a.m.	·08	15	7·68	" 14	10-11 p.m.	·27	60	6·48
Nov. 20	10-11 a.m.	·10s	60	2·40	" 16	4-5 a.m.	·20	20	14·40
" 22	9-10 a.m.	·07s	60	1·68	" 18	10-11 p.m.	·30	60	7·20
Dec. 22	11-12 p.m.	·05	45	1·60	" 19	10-11 a.m.	·12	60	2·88
" 29	5-6 p.m.	·10	20	7·20	Oct. 2	3-4 p.m.	·10	10	14·40
" 30	10-11 a.m.	·10	20	7·20	" 2	3-4 p.m.	·09	20	6·48
" 30	0-1 p.m.	·12	30	5·76	" 2	4-5 p.m.	·11	20	7·92
" 30	2-3 p.m.	·06	20	4·32	" 5	2-4 a.m.	·16	15	15·36
1880.					" 5	3-4 p.m.	·13	60	3·12
Feb. 8	3-5 a.m.	·09	60	2·16	" 6	7-8 p.m.	·18	60	4·32
" 9	7-8 a.m.	·12	60	2·88	" 6	8-9 p.m.	·10	30	4·80
" 16	9-11 a.m.	·22	60	5·28	" 7	3-4 a.m.	·09	40	3·24
" 18	8-9 p.m.	·08	60	1·92	" 7	3-4 a.m.	·12	60	2·88
" 21	4-5 p.m.	·06	20	4·32	" 9	10-11 p.m.	·22	60	5·28
March 1	8-9 a.m.	·04	20	2·88	" 9	10-11 p.m.	·10	15	9·60
" 3	1-3 a.m.	·06	40	2·16	" 10	1-3 a.m.	·45	60	10·80
" 31	7-9 p.m.	·08	60	1·92	" 20	11-12 a.m.	·16	60	3·84
April 2	0-2 p.m.	·06	30	2·88	" 22	11-12 p.m.	·04	15	3·84
" 5	3-4 p.m.	·04	10	5·76	" 26	10-11 a.m.	·10	60	2·40
" 14	2-3 p.m.	·20	60	4·80	" 27	2-3 a.m.	·22	60	5·28
" 15	3-4 p.m.	·04	10	5·76	" 27	9-10 p.m.	·04	10	5·76
" 20	3-4 a.m.	·12	60	2·88	" 28	9-10 a.m.	·10	25	5·76
" 26	0-1 p.m.	·07	15	6·72	" 28	10-11 a.m.	·16	30	7·68
June 1	1-2 p.m.	·04	10	5·76	Nov. 12	7-8 a.m.	·04	15	3·84
" 14	6-8 p.m.	·07	60	1·68	" 14	2-3 p.m.	·04	15	3·84
" 15	8-9 p.m.	·11	60	2·64	" 15	3-4 p.m.	·12	60	2·88
" 16	5-6 a.m.	·15	60	3·60	" 16	4-5 a.m.	·09	40	3·24
" 17	0-1 p.m.	·24	60	5·76	" 16	11-12 a.m.	·06	10	8·64
" 22	2-3 a.m.	·26	40	9·36	" 18	7-8 p.m.	·04	40	1·44
" 22	9-10 a.m.	·13	60	3·12	" 24	11-12 p.m.	·04	10	5·76
" 24	6-7 p.m.	·07	30	3·36	" 25	2-3 p.m.	·07	10	10·08
" 26	0-1 p.m.	·11	30	5·28	" 26	4-5 a.m.	·05	20	3·60
" 26	3-5 p.m.	·12	45	3·84	Dec. 15	0-2 p.m.	·06	60	1·44

Date.	Time of day.	Quantity of rain falling.	Duration of fall.	Rate of fall in 24 hours.	Date.	Time of day.	Quantity of rain falling.	Duration of fall.	Rate of fall in 24 hours.
		in.	min.	in.			in.	min.	in.
Dec. 16	10 11 a.m.	·06	40	2·16	Feb. 2	2-3 p.m.	·04	10	5·76
" 20	3-5 a.m.	·30	120	3·60	" 7	9-10 p.m.	·15	15	14·40
" 20	1-3 p.m.	·22	120	2·64	" 10	11-12 p.m.	·06	5	17·28
" 22	11-12 p.m.	·06	30	2·88	" 19	9-10 p.m.	·08	60	1·92
" 29	1-2 p.m.	·10	60	2·40	" 20	3-5 a.m.	·10	60	2·40
" 29	7-8 p.m.	·23	10	33·12	" 21	1-3 a.m.	·10	60	2·40
" 30	6-7 a.m.	·09	40	3·24	March 5	5-6 a.m.	·04	20	2·88
" 31	3-5 a.m.	·08	60	1·92	" 5	10-12 p.m.	·20	80	3·60
1881.					" 5	11-12 p.m.	·14	40	5·04
Jan. 19	3-5 a.m.	·10	60	2·40	" 20	7-8 p.m.	·06	15	5·76
" 29	1-3 p.m.	·05	20	3·60					

The above table shows only the periods when rain fell at a rate which, had it continued throughout the day, would have equalled or exceeded 1·44 in. If a mean of the daily rates of fall is taken from the foregoing table, on an average of the two years, April 1879 to March 1880, and April 1880 to March 1881, it will be seen that the largest (6·42 in. in 24 hours) occurred in the month of July, the second in intensity (6·09 in. in 24 hours) in September, and the third (5·57 in. in 24 hours) in December. The month of January (1·50 in. in 24 hours) had the least average in the two years. The largest average, however, in any single month occurred in September, 1880, when 7·57 in. was the average daily rate of fall. There were three months in the two years, viz., January, May and August, 1880, when no heavy falls occurred. The following figures show the monthly distribution of the averages in the two years :—

Months.	1879.	1880.	1881.
January	—	None	3·00
February.....	—	3·31	7·36
March	—	2·32	4·32
April	2·80	4·80	—
May	4·38	None	—
June	5·49	4·44	—
July.....	5·96	6·88	—
August	4·20	None	—
September	4·62	7·57	—
October	4·80	6·46	—
November	2·04	4·81	—
December	5·21	5·93	—

The greatest rate at which rain fell at any period was on the 10th July, 1880, when ·13 in. fell in five minutes, or at the rate of 37·44

in. in 24 hours. An almost equally heavy rainfall occurred on the 29th December, 1880, when 23 in. of rain fell in ten minutes, or at the rate of 33·12 in. in 24 hours.

It may also be of interest to note that of the 167 rainfall observations in Table I., 86 occurred between midnight and noon, and 81 between noon and midnight. It will be seen from the following figures, which give the duration of fall, the mean of the observations, and the average fall in a minute, that in the two years the falls which have lasted half-an-hour gave the greatest mean fall in a minute, and those which have not exceeded 40 minutes give the next highest mean rate of fall. The greatest number of heavy falls have occurred when the rate of fall has been between 2 in. and 3 in. in 24 hours, closely followed by those when the rate has been between 3 in. and 4 in. in the same period.

Duration of Fall in min.	5	10	15	20	25	30	40	45	60	75	80	90	120	135	140	150	180	285
Mean of Observations...	·073	·071	·075	·078	·100	·117	·122	·106	·151	·103	·200	·150	·24	·30	·30	·32	·75	1·33
Average Fall per minute	·014	·007	·005	·004	·004	·039	·030	·002	·002	·001	·002	·001	·002	·002	·002	·002	·004	·004

The following abstract from Table I. shows the number of times certain rates of fall have occurred in the two years, and also the number of times certain rates of fall given in the table have been exceeded.

Rate per diem between	Number of Times.	Number of times the rate exceeded that in first column.
1·44 and 1·60	5	167
1·61 „ 1·90	2	162
1·91 „ 2·00	6	160
2·01 „ 3·00	46	154
3·01 „ 4·00	30	108
4·01 „ 5·00	15	78
5·01 „ 6·00	25	63
6·01 „ 7·00	6	38
7·01 „ 8·00	10	32
8·01 „ 9·00	4	22
9·01 „ 10·00	3	18
10·01 „ 11·00	3	15
11·01 „ 12·00	1	12
12·01 „ 13·00	1	11
13·01 „ 14·00	0	10
14·01 „ 15·00	5	10
15·01 „ 17·00	1	5
17·01 „ 19·00	1	4
19·01 „ 33·11	1	3
33·12 „ 37·43	1	2
37·44	1	1

It is very desirable that observations of this class should be multiplied, especially in those parts of the country subject to heavy falls of rain, as it is very important to the engineer to know the rate at which rain falls at certain periods of the year, and by the use of a self-recording gauge the labours of the observer are reduced to a minimum.

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A FEW SIMPLE DIRECTIONS FOR THE MEASUREMENT OF SNOW UNDER VARIOUS CONDITIONS.

BY EDWARD MAWLEY, ESQ., F.M.S.

THE remarkable snowstorm which occurred on the 18th of January, 1881, having drawn the attention of rainfall observers generally to the importance of the correct measurement of snow, I have thought the present a favourable opportunity for offering to those readers of *British Rainfall* who have as yet had but little experience in the management of a rain-gauge during snowy weather the following brief series of practical hints :—

Rain-gauges having shallow rims.—Where rain falls with snow, or immediately before or after it, the whole of the snow becomes melted as soon as it reaches the funnel of the rain gauge, provided the amount deposited be not large. In such cases shallow-rimmed gauges are fully as trustworthy as those having deep rims like those of the Snowdon pattern. When, however, a fall of more than an inch or two in depth takes place, or when the snow is dry, or the wind high, the quantity collected by these gauges very imperfectly represents the true amount. In other words, although quite satisfactory as rain gauges, they are in no way adapted for the correct measurement of falling snow. If, therefore, the observer be provided with one of these shallow rimmed gauges, it will be necessary for him, in times of snow, to disregard altogether the amount found in the funnel and to follow one of the recommendations given in Rule XV.,* viz., “Select a place where the snow has not drifted, invert the funnel, and turning it round, lift and melt what is enclosed.” Some care should be taken to choose for this purpose some spot on a level piece of ground, a lawn for preference, where the snow is judged to be of average depth. Before lifting the funnel, the snow round it should be cleared away and a thin piece of wood, or metal, rather larger than the mouth of the gauge placed between the inverted funnel and the ground, which will assist in keeping the whole of the snow in the gauge while it is

* “Suggestions for securing uniformity of practice among rainfall observers,” page 7.

being turned upwards. As it frequently happens that before one layer of snow is melted a second is deposited, it is always desirable to be prepared for this by clearing a certain portion of the lawn after each measurement. When, however, the fall of snow is an unusually heavy one, it will be useless with a shallow-rimmed gauge to try and measure the amount deposited in the way that has been just described. Under such exceptional circumstances, and these only, the observer should have recourse to recommendation 3 of Rule XV. and "measure with a rule the average depth of snow, taking one-twelfth as the equivalent of water."

Rain gauges having deep rims.—Although it is extremely doubtful whether, in the case of very dry and small flakes falling with a high wind, even a deep-rimmed gauge catches as much as it should, yet, all things considered, this form of gauge is now generally acknowledged to be far superior to any other. Indeed, for my own part, so satisfactory have I found, under nearly all conditions, the one which I have now had in use for upwards of eight years, that I have trusted exclusively to its indications for the measurement of snow as well as rain during the whole of this period. At the same time it should be clearly understood that even these rain gauges, although practically snow gauges as well, are yet extremely dwarf and shallow ones, and, therefore, require some amount of extra attention in snowy weather. For instance, when anything like a heavy snowstorm occurs at a time when the wind is high, it will be necessary to melt the snow collected in the funnel before it has risen in any part of it to within an inch of the top of the gauge, otherwise much of what subsequently falls will be in danger of being blown out. At the same time all the snow surrounding the gauge, and particularly that on the windward side, should, for the distance of several feet, be cleared away to prevent it from rising above the mouth of the funnel and being blown into it. Again, in very deep falls of snow it may be needful, even in calm weather, to melt the snow found in the gauge, and to clear away that surrounding it, even oftener than twice in the twenty-four hours, though this will very seldom indeed be found to be necessary. Still it is well for the observer to be continually on the alert, as the heavier the snowstorm the more important it is that the amount of snow deposited should be accurately gauged. For after all a Snowdon gauge, even if allowed to become quite full will only hold as much snow as would cover the ground to a depth of about 5 or 6 inches. I have dwelt more particularly on the precautions to be taken when

the flakes of snow are dry, but occasionally moist flakes prove even more troublesome, as they cling to the rim of the gauge, and in this way contract its orifice. Whenever this occurs the rim should be cleared of snow at as frequent intervals as is practicable.

Snow gauges.—A snow gauge is usually a simple metal cylinder, closed at the lower end, of the same diameter as the mouth of the rain gauge; and a very desirable addition it is, provided it be emptied every time that the rain gauge is found to have any water in it. Unless, however, this be done it is more likely to prove a source of error than of increased accuracy. A simple rule would be to rely wholly on the cylinder in the case of snow, and throw away all the snow found collected in the rain gauge; but in all other cases to consult the latter and throw away any water found in the snow cylinder. I do not think it advisable that a snow gauge should be more than two feet deep, or for the top of it to be at a greater height than that above the ground. For since rain gauges are found to receive less rain the higher they are placed above the ground, it is obvious that this would be still more the case with a gauge which is employed to collect so light a substance as snow. The cylinder should be secured in position by having three small stakes driven firmly into the ground round it, but not rising quite so high as the top of the cylinder. It may then be easily removed and emptied, and as easily replaced, and yet be perfectly secure in the highest wind.

Melting the Snow.—This may be accomplished in several ways, but perhaps the simplest plan of all is the one I have myself adopted, viz., to measure off in the measuring glass half-an-inch of quite warm water, and to pour this carefully upon the snow in the funnel of the rain gauge as it stands, allowing the melted snow and warm water to run down into the receiver together. Should any snow still remain unmelted in the funnel, it will be necessary to measure off another half-inch of warm water and repeat the operation. This second application, however, will not often be required if only the first has been properly distributed. Before the water is poured into it, the measuring glass should be held for a short time in the steam to avoid cracking it. Care must, of course, also be taken that each half-inch of water is accurately measured, and afterwards deducted from the total measurement before the amount is entered as rain in the journal. When this entry has been made it will be well to place the letter S against it in order to indicate that the fall was one of snow.

Measuring the depth of Snow on the ground.—It is advisable that an entry in the journal should be always made by the observer as to the depth to which any fall of snow has covered the ground. In all ordinary cases this is a matter of no difficulty whatever, as it is only necessary to select a spot where the snow is estimated to be lying at an average depth and then make the measurement with a rule. When, however, the snow has fallen during a very high wind, and there are seen to be considerable inequalities in the fall, it will be necessary to take the mean of a number of measurements over as large and level a space as possible at points equi-distant from each other. Where the surface temperature of the ground is, at the time of any fall, below the freezing-point and the fall itself a light one, I have found that I could gauge the depth of it more accurately upon a gravel path than would be possible on a lawn, as the snow is there buoyed up by the blades of grass above the real level of the ground. But in all other cases the measurement had better be taken, where possible, on a level piece of lawn.

The principal object with which the foregoing directions have been written has been to impress on rainfall observers in general, and more particularly on those about to take observations for the first time, the necessity there is for giving their rain gauges some extra attention in snowy weather, as without this no entirely satisfactory record of the rainfall of their district can be kept. For it will, I trust, have been seen that whatever form of gauge may be used, it cannot always be left altogether to itself while snow is falling. Moreover, it should never be forgotten that every inaccurate measurement will more or less seriously affect, not only the monthly total and with it that for the whole year, but even, indirectly, the entire series of observations that have been previously or that may be hereafter made. Considering how slight are the demands which a rain gauge makes upon an observer's time during the greater part of the year, I do not think he should begrudge the little additional care and attention which these snow measurements occasionally require. Let him on the contrary, when he sees the snow-flakes falling, recognize in them messengers come to remind him that the gauge which is to receive and measure these flakes, may ere long require some little assistance at his hands.

EDWARD MAWLEY.

Addiscombe, Croydon, April, 1881.

ROTHERHAM EXPERIMENTAL GAUGES.

WE greatly regret that another year has passed without it having been in our power to take any steps towards carrying out the alteration in the arrangement of these gauges, which we suggested. We are still hoping that it may be done, but whether the requisite leisure will be forthcoming this year is, we fear, somewhat doubtful.

Meanwhile the observations are continued precisely as in previous years, and yield very similar results. Having, however, explained them fully in *British Rainfall*, 1879, we think it unnecessary to repeat the remarks upon the present occasion.

RAIN GAUGE EXPERIMENTS, ULLEY RESERVOIR, ROTHERHAM, 1880.

Lat. $53^{\circ} 22' 59''$ N. Lon. $1^{\circ} 19' 9''$ W. Altitude 184 ft. $\bar{N}$

FIVE MOUTHED GAUGE.

INCLINED ROTATING GAUGE.

Height above ground.	5ft.					5 ft.
Months.	Facing East.	Facing North.	Facing West.	Facing South.	Horizon Centre.	45°
January	·066	·080	·107	·057	·136	·197
February	2·535	·696	·730	1·677	1·624	3·245
March	1·371	·796	1·189	1·400	1·785	2·923
April	2·929	1·582	·256	·347	·972	1·775
May	1·434	1·221	1·277	·199	1·723	2·274
June... ..	1·380	1·796	1·657	·345	3·091	3·504
July	3·015	1·311	·685	·607	4·635	4·126
August	·722	1·506	·458	·180	1·602	2·501
September	1·631	2·981	1·241	·743	4·629	5·897
October	3·832	8·093	1·680	·093	5·931	8·860
November	·836	1·018	1·076	1·717	2·316	3·441
December	1·541	1·592	·907	1·151	3·180	3·877
Totals	21·292	22·672	11·263	8·516	31·624	42·620

RAIN GAUGE EXPERIMENTS, ULLEY RESERVOIR (*continued*).

ELEVATED GAUGES.

Height above Ground ...	1 ft.			5 ft.			10 ft.		
Months.	Read Daily.	Read Mnthly.	Diff.	Read Daily.	Read Mnthly.	Diff.	Read Daily.	Read Mnthly.	Diff.
January	·127	·133	+·006	·098	·122	+·024	·098	·116	+·018
February	1·624	1·718	+·094	1·326	1·613	+·287	1·405	1·504	+·099
March	1·810	1·805	—·005	1·574	1·681	+·107	1·647	1·675	+·028
April	1·025	1·012	—·013	·872	·905	+·033	·867	·905	+·038
May	1·866	1·825	—·041	1·664	1·652	—·012	1·655	1·678	+·023
June	3·152	3·248	+·096	2·956	3·224	+·268	2·983	2·994	+·011
July	4·719	4·732	+·013	4·638	4·700	+·062	4·494	4·625	+·131
August	1·727	1·739	+·012	1·537	1·881	+·344	1·545	1·696	+·151
September ...	4·704	4·767	+·063	4·683	4·550	—·133	4·465	4·549	+·084
October	6·200	6·526	+·326	5·914	6·421	+·507	5·870	5·979	+·109
November ...	2·372	2·361	—·011	2·126	2·312	+·186	2·139	2·118	—·021
December ...	3·153	3·097	—·056	2·840	2·813	—·027	2·817	2·868	+·051
Totals	32·479	32·963	+·484	30·228	31·874	+1·646	29·985	30·707	+·722

ELEVATED GAUGES (*continued*).

Height above ground	15 ft.			20 ft.			25 ft.		
Months.	Read Daily.	Read Mnthly.	Diff.	Read Daily.	Read Mnthly.	Diff.	Read Daily.	Read Mnthly.	Diff.
January	·097	·096	—·001	·098	·112	+·014	·096	·116	+·020
February	1·370	1·400	+·030	1·438	1·265	—·173	1·489	1·480	—·009
March	1·582	1·609	+·027	1·660	1·600	—·060	1·638	1·690	+·052
April	·874	·904	+·030	·894	·847	—·047	·871	·852	—·019
May	1·657	1·623	—·034	1·693	1·570	—·123	1·697	1·630	—·067
June	2·943	2·868	—·075	2·943	2·654	—·289	2·942	2·910	—·032
July	4·456	4·387	—·069	4·447	4·284	—·163	4·400	3·716	—·684
August ...	1·527	1·620	+·093	1·606	1·636	+·030	1·552	1·301	—·251
September ...	4·341	4·319	—·022	4·457	4·470	+·013	4·510	4·440	—·070
October	5·870	5·762	—·108	5·867	5·641	—·226	6·007	5·972	—·035
November ...	2·141	2·034	—·107	2·147	2·177	+·030	2·173	2·145	—·028
December ...	2·797	2·689	—·108	2·820	2·824	+·004	3·088	2·854	—·234
Totals	29·655	29·311	—·344	30·070	29·080	—·990	30·463	29·106	—1·357

RAINFALL AT THE ROYAL OBSERVATORY, GREENWICH.

Lat. 51° 28' 38'' N. Long. 0° 0' 0''

Communicated by SIR G. B. AIRY, K.C.B., D.C.L., &c., Astronomer Royal.

No. of days on which rain fell.	1880	MONTHLY AMOUNT OF RAIN COLLECTED IN EACH GAUGE.							
		Self-registering Gauge of Osler's Anemometer.	Second Gauge at Osler's Anemometer.	On the roof of the Octagon Room.	On the roof of the Magnetic House.	On the roof of the Photographic thermometer shed.	Crosley's	Cylinder partly sunk in the ground. read daily.	Cylinder partly sunk in the ground. read mntly
		in.	in.	in.	in.	in.	in.	in.	in.
9	Jan. ...	0·056	0·054	0·192	0·197	0·230	0·270	0·261	0·263
18	Feb. ...	0·928	0·923	1·702	2·035	2·259	2·260	2·357	2·250
4	March	0·081	0·123	0·313	0·423	0·512	0·495	0·595	0·463
16	April..	0·957	1·044	1·779	1·943	2·165	2·175	2·205	2·040
4	May...	0·309	0·333	0·415	0·452	0·496	0·600	0·497	0·330
20	June...	1·405	1·528	1·797	2·151	2·232	2·690	2·257	2·100
24	July...	2·762	2·824	3·282	3·549	3·686	4·130	3·812	3·691
6	Aug...	0·665	0·732	0·822	0·946	0·980	1·115	0·978	0·836
12	Sept...	2·858	2·968	3·417	3·750	3·959	4·355	4·002	3·825
18	Oct. ...	4·877	5·352	5·850	7·044	7·715	8·290	7·653	7·654
14	Nov ...	1·021	1·075	1·373	1·655	1·998	2·105	2·060	1·965
15	Dec. ..	1·778	1·992	2·386	2·558	2·855	3·020	3·005	2·885
160	Sums..	17·697	18·948	23·328	26·703	29·087	31·505	29·682	28·302

The heights of the receiving surfaces are as follows :

	Above the mean level of the Sea.		Above the Ground.	
	ft.	in.	ft.	in.
The two Gauges at Osler's Anemometer	205	6	50	8
Gauge on the roof of the Octagon Room	193	2	38	4
Gauge on the roof of the Magnetic House	176	7	21	9
Gauge on the roof of the Photographic Thermometer Shed	164	10	10	0
Crosley's Gauge	156	6	1	8
The two Gauges, partly sunk in the ground	155	3	0	5

Until May 22, the two Osler Anemometer Gauges were partly overshadowed by a scaffold erected round the vane of the Anemometer. The amounts collected in these gauges during the first five months of the year are therefore probably too small. The gauge on the "Royalist" Police Ship has been discontinued.

January 27th, 1881.

WILLIAM ELLIS,
For the Astronomer Royal.

COUNTY ORGANIZATIONS.

I HAVE on several occasions referred to the desirability of developing this branch of rainfall work, and do so once more, because I am yearly more and more convinced of its importance.

At the present time organizations of various extent are in operation in the following counties :—

Cornwall,	Hereford,	Norfolk,	Wiltshire.
Devon,	Hertford,	Northampton,	

The **Cornwall** and **Devon** system is wholly due to the leading newspaper in the South-West of England, the *Western Morning News*, which sends annually to nearly every observer in Devon and Cornwall a supply of printed and addressed post-cards, which have spaces for the information as given in the following line :—

STATION & OBSERVER.	Total rainfall.	Greatest fall any one day.	Date of greatest fall.	Wet days.	Diameter of gauge.	Height above sea.	Above ground.
Navigation School, Plymouth— John Merrifield	7·58	2·15	1	28	in. 8	75	ft. 9½

The post-cards are collected in the Editor's office, and the table is set up in type from the original cards, whereby the risk of error in transcribing is avoided.

The county which follows next in alphabetical order in the above short list is **Hereford**. The organization in this county was arranged jointly by the Rev. Nash Stephenson and the Editor of the *Hereford Times*. Owing to the death of Mr. Stephenson, the preparation of the table has fallen entirely upon the Editor, whose duties in connection with his gigantic paper (larger than *The Times*) leave little leisure for scientific work. Hence there are too many gaps in the Hereford table, and it is most desirable that some resident in the county should offer to take Mr. Stephenson's place and see that the observers throughout the county are properly supplied with forms, and that they fill them up correctly and with sufficient promptitude to be available for insertion in the newspaper.

Next in order comes **Hertford**—a county which is becoming known as possessing one of the best worked of the County Natural

History Societies of this country. In connection with the Hertfordshire Natural History Society, the Rev. C. W. Harvey, F.M.S., has started a very useful form of monthly summary of rainfall—not, it is true, giving (as in two other counties which we have to mention) the daily rainfall, but distributing the values very carefully under the various watersheds and sub-watersheds of the county. In order that my readers may judge of the completeness of this table I reprint the last received.

RAINFALL IN HERTS.—For the month of April, 1881.

Rainfall in River Districts.			Station.	Above Sea Level.	Depth of Rain.	Diff. from Mean 1870-9	Greatest fall in 24hours	Date.	Wet days.
				feet.	inches	inches†	inches		
THAMES '90	THAME '50	Upper Thame '50	Aylesbury (Bucks)	280	+(.50)	— 1.68	.20	12th	3
		Upper Colne.....							
	COLNE '93	Ver 100	Kensworth	902	1.02	— 1.16	.25	12th	13
			Rothamstead	420	.99	— 1.19	.18	11th	11
			Cowroast	345	.94	— 1.24	.25	12th	8
			Berkhamstead	370	.92	— 1.26	.28	11th	10
		Gade and Bul- borne '96 ...	Gt. Gaddesden	426	1.06	— 1.12	.27	23rd	11
			Nash Mills	237	.91	— 1.27	.25	23rd	11
		Chess							
		Lower Colne '92	Watford (1)*.....	240	.95	— 1.23	.25	11th	11
			" (2)*.....	224	.82	— 1.36	.25	11th	11
			Bushey Heath	480	.96	— 1.22	.25	11th	11
	Moor Park		340	.94	— 1.24	.24	11th	8	
	BRENT	Upper Brent.....							
		Upper Lea 1.04 ..	Bayfordbury	250	.98	— .94	.34	13th	9
	LEA '91		Hoddesdon	...	1.10	— .82	.25	13th	11
		Mimram '88 ...	Welwyn	...	.88	— 1.04	.16	11th	10
			Knebworth	417	.86	— 1.06	.16	13th	11
		Beane '83	Datchworth	350	.80	— 1.12	.17	11th	11
			Therfield.....	500?	1.11	— .81	.31	14th	10
		Rib '96	Throcking	484	.81	— 1.11	.14	11th	13
		Ash '86	Much Hadham	200	.86	— 1.06	.16	11th	10
			Stansted (Essex)	240	+(.89)	— 1.03	.38	15th	6
		Stort '80.....	Moor Hall (Essex)	273	+(.71)	— 1.21	.19	29th	12
			Waltham Abbey (Essex) ..	82	1.14	— .78	.39	13th	10
		Lower Lea '96 ..	Southgate	240	.78	— 1.14	.21	29th	10
			Hitchin	238	.73	— 1.22	.12	11th	12
Ivel '77		Hiz '75	" High Down	422	.77	— 1.18	.14	15th	12
		Upper Ivel '82 ...	Stotfold (Beds.)	220	+(.82)	— 1.13	.20	13th	11
	Cam '95	Odsey (Cams.)	264	.89	— .79	.20	25th	11	
		Rhee '95.....	Royston	269	1.02	— .66	.38	14th	10
	Mean for the County				..	.92	— 1.13		

* (1) Watford House, (2) Wansford House.

† Not taken into consideration in determining the County Mean Fall.

‡ + signifies above, — below the mean.

N.B.—One inch of rain represents 101 tons of water per acre. A wet day is one on which 0.01 in. or more falls.

Mean rainfall (1870-79) for the month in River Districts:—Thame, 2.18; Colne, 2.18; Brent, —; Lea, 1.92; Ivel, 1.95; Cam, 1.68.

C. W. HARVEY, F.M.S., *Throcking Rectory, Buntingford, Herts.*

For **Norfolk**, the Rev. J. M. Du Port continues to collect the *daily* rainfall from nearly all the observers, to visit the stations when opportunity offers, to examine the returns, and to send the completed table to the *Norfolk Chronicle*, and that journal continues, as it has now done for nearly ten years, to publish the table *in extenso*.

For **Northampton**, Mr. Terry used to compile, and the *Northampton Herald* used to publish, a table for the county nearly identical with that for Hereford, but as I have not received a copy for several months, I do not know whether the system is maintained or not.

Lastly, comes **Wiltshire**. Here everything is due to the brain and the purse of the Rev. T. A. Preston, who has developed a facsimile of the Norfolk system of Mr. Du Port, with, however, one difference, viz., that as none of the Wiltshire newspapers would devote the requisite space to printing the tables, Mr. Preston has them printed separately and distributes copies to all the observers and to some of the leading scientific societies.

The adoption of some such system as those above described in every county would not only give a general impulse to rainfall work, but it would be beneficial in many ways. It would bring the observers more into mutual communication, and that would tend to increase their interest in, and the accuracy of, their observations. The publication of the results at the end of each month facilitates comparisons, and therefore tends to the detection of errors, and in the rare case of an observer becoming lazy, the end of the month coming round, arouses his flagging energy and prevents his indolence leading to abandonment of his observations. Moreover, no matter how willing I may be, it is simply impossible for me to visit all the stations. Since 1862 I have been altogether to 793, but of these many are discontinued, perhaps not more than half are *now* at work—say 400 out of about 2,400, or one out of every six. Although this large experience has doubtless made me quicker than the county superintendents would at first be at noticing defects as to the position of rain gauges, and in the practice of observers, I am sure that very great benefit in many respects would result from the general adoption throughout the country of such friendly supervision as is exercised in Norfolk and in Wilts. I therefore sincerely hope that neither distrust of their own qualifications, nor reluctance to put themselves forward, will prevent many of my old correspondents volunteering to undertake this duty. I ask them to volunteer, because I think that that is the best plan; but if a sufficient number do not offer, it will be my duty to consider whether I should specially invite some of my correspondents to undertake the office. But as I have already said, I would much rather that the assistance should be offered.

CHANGES IN THE STAFF OF OBSERVERS.

A THEORETICALLY perfect staff of rainfall observers would be one amply sufficient in number, perfect in the geographical distribution of their places of observation, never absent, never ill, never dying, and whose instruments were as perfect and as everlasting as themselves.

Our staff necessarily falls very far short of this, and about one-tenth of the records of each year fail to appear in the following year, while a still larger number of new records are annually received. Here, however, we must interpose a caution. It does not follow that because nearly one station out of ten disappears each year, that the continuity of our records is broken to anything like that extent. The observers who form this migratory tenth, are largely composed of those whose interest in the work is but slight, some are constantly changing their residence, others keep their records in such an unsystematic way that they lose them, or let their gauges run over, or become leaky, and in one or other of these ways they are constantly claiming notice in this list ; but, as a rule, the length and completeness of the records now kept is to me the most remarkable feature of rainfall work. Looking, for instance, at the comparison tables in this volume, and remembering that a single break in the register would banish any station from that table, can any one describe it as other than a remarkable proof of regularity of habit and continuity of work ?

So many enquiries were made as to " Why the return from ——— was not inserted," that the compilation of this list seems indispensable ; and if my correspondents will help, many of them can through it render me some assistance. I will explain how. In the first place, they will see that against about 40 stations there is the entry, " No reply," which indicates that, although the observers at those stations have been thrice applied to for a copy of their returns, no copy or other communication has reached me. In these days of multitudinous circulars, I can quite understand many of my applications being thrown unopened into waste paper baskets ; but I do not willingly

lose a single observer, and, therefore, if any one can clear up some of these cases of "No reply" it will be useful.

Then the accidents to gauges, the overflowings, leakages, &c., though not very numerous—about a dozen out of 2,200—should act as incentives to watchfulness.

But the most important feature in the list are the "observations ceased," "observer dead," and "observer left," which constitute nearly half the entries. Every one of these may indicate a locality where a fresh station is desirable or even indispensable.

The other side of the account has the advantage of showing that the absentees are more than replaced, and it also affords the opportunity of giving a sort of introductory notice of our new contributors.

ENGLAND.

MIDDLESEX (43).

ABSENT RECORDS.

Ealing (Clare Lodge)—*Observer left*.
Hampstead (South Hill Park)—*Obs. ceased*.
Kentish Town Reservoir—*Obs. ceased*.
Hornsey—*No observations*.
Wood Green—*Record lost*.
Colney Hatch—*Observer left*.
Mill Hill—*Record lost*.

INSERTIONS.

Strawberry Hill Station.
Ealing (Castlebar Road).
St. John's Wood (Springfield Road).
Kidderpore Reservoir.
Highgate (Milfield Lane).
Finchley (Hilton House).

SURREY (58).

Dorking (Fir Tor)—*Gauge moved*.
Godstone (Tyler's Green)—*Record imperfect*.
Reigate Hill—*Record imperfect*.
Banstead (Woodcote)—*Observations ceased*.
Cobham (Faircrofts)—*No reply*.
Surbiton (Grove Road)—*Observer left*.
Richmond (Halford House)—*Gauge moved*.

Cranleigh (Alderbrook).
" (Hascombe).
Reigate (Woodhatch Lodge).
Guildford (Wern).
Weybridge (Church Street).
Mitcham (Tamworth Lodge).
Vauxhall (Effra Creek).

KENT (63).

Folkestone (Trinity Vic.)—*Obs. ceased*.
Staplehurst Park—*Obs. ceased*.
Edenbridge (Falconhurst)—*Record imperfect*.
Sittingbourne—*No reply*.
Ramsgate (St. Augustines)—*Record imperfect*.
Birchington (Thor)—*Record imperfect*.
North Foreland Lodge—*No reply*.
Dartford (The Downs)—*No reply*.
Erith (Crossness)—*Gauges overflowed*.

Tunbridge Wells.
Tunbridge (Hadlow Park).
Maidstone (Lower Tovil).
Sevenoaks (Rockdale).
" (Clare Bank).
Aylesford (Preston Hall).
Faversham (Herne Hill).

WEST SUSSEX (21).

Chichester Museum—*No reply*.
Cowfold (Woldringfold)—*Gauge overflowed*.

Horsham.
" (Compton's Lea).

EAST SUSSEX (40).

Brighton (W. Pier End)—*Obs. ceased.*
 Hastings (Manor House)—*Obs. ceased.*
 Ticehurst—*Record imperfect.*

Brighton (Lewes Road).
 St. Leonards (Carisbrook Road).
 Hastings (Harmer's Reservoir).
 Cuckfield (Borde Hill House).
 Uckfield.
 Crowboro' Beacon Observatory.

HAMPSHIRE (45).

Christchurch (Carbury)—*Record imperfect.*
 Southampton (Eling)—*Record imperfect.*
 Fordingbridge—*Record imperfect.*
 Winchester (Otterbourne)—*Obs. ceased.*
 Petersfield (Liss Place)—*Record imperfect.*
 Alton (E. Tisted)—*Record imperfect.*

Portsmouth.
 Winchester (Harestock).

BERKSHIRE (18).

Maidenhead (Kimber Cottage)—*No reply.*
 Streatley Vicarage—*Obs. ceased.*
 Wantage—*Obs. ceased.*

HERTFORD (24).

Totteridge (Poynter's Grove)—*Observer left.*
 Bushey Heath—*Record lost.*
 „ Station—*Record imperfect.*

Hemel Hempstead (Nash Mills).
 Buntingford (Throcking).

BUCKS (14).

Greenlands—*Record imperfect.*

| Woburn Sands.

OXFORD (16).

Swyncombe House—*Obs. ceased.*
 Baldon—*Observer left.*
 Radcliffe Observatory—*Gauges changed.*
 Banbury (Sibford)—*Record imperfect.*
 „ (Broughton)—*Obs. ceased.*

Henley (Assenton).
 „ (Stonor Park).
 Oxford (Norham Road).
 Woodstock (Wootton).

NORTHAMPTON (24).

Northampton (St. Giles St.)—*Gauge moved.*
 Oundle (Pilton)—*Record lost.*

| Brackley.
 Weedon (Floore).

HUNTS (6).

| St. Neots (Waresley).

BEDFORD (19).

| Ampthill (Silsoe).
 „ (Wrest Park).

CAMBRIDGE (30).

| Cambridge (Quy Hall).

ESSEX (23).

Chigwell Row— <i>Record imperfect.</i>	Woodford (The Harts).
Little Waltham— <i>No reply.</i>	
Dunmow— <i>Obs. ceased.</i>	
Saffron Walden (Audley End)— <i>No reply.</i>	

SUFFOLK (29).

Hadleigh (Oldham)— <i>Obs. ceased.</i>	Ipswich (Orwell Park).
Woodbridge (Grundisburgh)— <i>No reply.</i>	„ (Fonnereau Road).
	Framlingham.
	Stradbroke.
	Becceles (Ellough).
	Lowestoft (Kirkley).
	„ (Somerleyton).

NORFOLK (52).

West Tofts [Brandon]— <i>Observer left.</i>	Watton.
Norwich (Literary Institute)— <i>No reply.</i>	„ (Ovington).
Acle Rectory— <i>No observations.</i>	Norwich (Carrow House).
Fakenham (Colkirk)— <i>Obs. ceased.</i>	Swaffham.
	Hockering.
	Salhouse.

WILTSHIRE (26).

Marlborough (Mildenhall)— <i>Record imperfect.</i>	Warminster (Rye Hill).
Malmesbury (Charlton Park)— <i>Record imprft.</i>	New Swindon.

DORSET (18).

West Boro' Wimborne— <i>No reply.</i>	Poole.
	Bere Regis (Bloxworth).

DEVONSHIRE (76).

Plympton (Ridgeway)— <i>Record imperfect.</i>	Kingsbridge (Prawle Point).
Horrabridge (Grimstone)— <i>Obs. ceased.</i>	Paignton (Madeira Cottage).
Teignmouth (Landscore)— <i>Obs. ceased.</i>	Walkhampton (Lowery).
Exeter (The Quarries)— <i>No reply.</i>	Ashburton (Leusden Vicarage).
Broad Clyst (Brockhill)— <i>No observations.</i>	Princetown.
Zeal Monachorum— <i>Obs. ceased.</i>	„ (Cowsie Valley).
Barnstaple (Arlington Court)— <i>Observer dead.</i>	Ashburton (Widcombe).
	Hatherleigh (Winsford).
	Tiverton (Ivy Place).
	Torrington (Stevenstone).

We are extremely glad to record the advent of six new stations belonging to the Dartmoor district. It is still very far from as well provided with stations as we desire, but we welcome all the help we can get, and especially Mr. Francis's stations at Lowery and Cowsie.

CORNWALL (31).

Camborne— <i>Record imperfect.</i>	Redruth (Trewirgie).
„ (Crowan)— <i>Funnel blown off.</i>	
Treglines (St. Minver)— <i>Obs. ceased.</i>	

SOMERSET (36).

Taunton (Hovelands Terrace)— <i>Obs. ceased.</i>	| Milverton (Fitzhead).
,, (Bishops Lydeard)— <i>Record imprft.</i>	

GLOUCESTER (34).

Bristol (Ashleydown)— <i>Record imperfect.</i>	| Bristol (Over Court).
Minchinhampton (The Coigne)— <i>Obs. ceased.</i>	| Lechlade.
	| Cirencester (Claremont Place).
	| Gloucester (Llanthony Lock).
	| ,, (Maisemore Lock).
	| Cheltenham (Montpellier Lodge).
	| Tewkesbury (Upper Lode).

HEREFORD (19).

Fownhope— <i>Record imperfect.</i>	| Whitfield.
Hereford (Castle Street)— <i>Record imperfect.</i>	| Pembridge (Marston).
,, (Credenhill Court).	

SHROPSHIRE (21).

Cleobury Mortimer— <i>Observer dead.</i>	| Burford House [Tenbury].
Craven Arms (Stokesay)— <i>Record imperfect.</i>	| Middleton-in-Chirbury.
Church Stretton (Stretton House)— <i>No reply.</i>	| Coalbrookdale (Horsehay).

STAFFORD (24).

Sedgeley— <i>Obs. ceased.</i>	| Alrewas (The Cottage).
Knypersley [Congleton]— <i>Record incorrect.</i>	| Cheadle (Oakamoor).

WORCESTER (19).

Kidderminster (Comberton Rd.)— <i>Observer dead</i>	| Worcester (Diglis Lock).
Dudley (Himley Road)— <i>Obs. ceased.</i>	| ,, (Bevere Lock).
	| Droitwich (Holt Lock).
	| Stourport (Lincombe Lock).
	| ,, (Hartlebury).

The distribution of stations in Worcester and also in Gloucester has been materially improved by the establishment by the Commissioners for the river Severn, on the recommendation of Mr. H. J. Marten, C.E., of rain gauges at seven of their locks. Perhaps some day the Thames Conservancy Board may think it worth while to do likewise.

WARWICK (23).

| Kenilworth (Lynton Villa).
| Coventry (Ryton-on-Dunsmore).
| Nuneaton (Caldecote House).
| Atherstone.

LEICESTER (22).

Fleckney— <i>Record lost.</i>	| Kilby.
	| Loughboro' (Nan Pantan Reservoir)

RUTLAND (8).

| Uppingham (Ayston).

LINCOLN (45).

Horncastle (Bucknall)—*Gauge overflowed.*Stamford (Northfields).
Spilsby (Partney).
Market Rasen.

NOTTINGHAM (21).

Nottingham (Strelley Hall).
Eastwood Colliery.
Tuxford Grammar School.

DERBY (36).

Burbage House—*Record imperfect.*Ripley (Aldercar Hall).
Chesterfield (Brimington Hall).

CHESHIRE (42).

Chester (Curzon Park)—*No observations.*Siddington (Thornycroft Hall)—*Record imprft.*Arnfield (Tintwistle)—*Reporter ill.*Lymm (Agden Hall).
Bowdon (Erlesdene).
,, (The Firs).

LANCASHIRE (115).

Liverpool (Greenhill, Allerton)—*Obs. ceased.*Warrington Cemetery—*Gauge out of order.*Manchester (Alexandra Park)—*Gauge moved.*Manchester (Prestwich)—*Record incorrect.*Bury (Gin Hall)—*Record incorrect.*Lytham (Whalley House)—*Obs. ceased.*

Brierfield = Monkholme, which see.

Broughton (Woodland Rectory)—*Record imprft.*Kelton (Aigburth).
Eccles (Monton Green).
Oldham.
,, (Brushes Clough).
Bury (Gin Hall).
Milnrow (Piethorne).
Over Darwen (Pickup Bank).
Burnley (Briercliffe Vicarage).
Kirkham (Weeton).
Garstang (Barnacre Reservoir).
Brathay Hall [Ambleside].

YORKSHIRE (WEST RIDING) (147).

Sheffield (Ranmoor)—*Record imperfect.*Tickhill—*No reply.*Goole—*Gauge out of order.*Bradford (Heaton Res., new g.)—*Obs. bad.*Bashall Lodge [Clitheroe]—*Obs. ceased.*Ilkley (Ashburn)—*Observer left.*Skipton (Embsay Kirk)—*No reply.*,, (Coniston Cold)—*Observer dead.*,, (Thorpe Fell)—*Record imperfect.*,, (Sandbed Beck)—*Record imperfect.*Pateley Bridge (Trunla)—*Record imperfect.*Dent (Stone House)—*Obs. ceased.*Doncaster (Firsby).
Holmbridge (Batley W. W.).
Saddleworth.
Strines Dale [Oldham].
Denshaw.
Doncaster (Kirk Bramwith).
Goole (Tillage Works).
Bradford (Top of Stairs).
,, (Leeming Reservoir).
,, (Leeshaw Reservoir).
Shipley (Moor Head).
Bingley (The Grange).
,, (Sunny Dale).
Slaidburn (Dunsop Houses).
,, (Middle Knoll).
,, (Brennand).
,, (Whitendale).
,, (Cabin Hill).
,, (Baxton Fell).
York (Copmanthorpe).
,, (Park Street).
Ripon (Borage House).

Owing to the rapidly increasing demand for water both for domestic and manufacturing purposes, and the consequent struggle to obtain suitable supplies in the counties of Lancashire and Yorkshire, the number of stations is rapidly increasing, and thus information originally obtained for practical objects becomes available for scientific purposes.

YORKSHIRE (EAST RIDING) (15).

Market Weighton (Holm)— <i>Record imperfect.</i>	Patrington (Spurn Head).
Hornsea (East Gate House)— <i>No reply.</i>	
Pocklington (Great Givendale)— <i>Record imperfect.</i>	
Hull (Met. Council)— <i>Record imperfect.</i>	

YORK (NORTH RIDING) (40).

Flaxton Grange— <i>Obs. ceased.</i>	Thirsk.
Thirsk (Maunby Hall)— <i>No reply.</i>	„ (Sowerby).
Fylingdales Moor (Chapel Farm)— <i>Obs. ceased.</i>	Hawes Junction.
„ „ (Flask Inn)— <i>Obs. ceased.</i>	Leyburn (Wensley).
„ „ (Evan Howe)— <i>Obs. ceased.</i>	Hambleton Hills (High Paradise).
Richmond (Barningham Park)— <i>No reply.</i>	Lofthouse (Grinkle Park).
	Guisborough (Skelton Reservoir)

DURHAM (23).

Barnard Castle (Whorlton) <i>Record imperfect.</i>	Sunderland (Claremont Terrace).
Gainford— <i>Observer dead.</i>	

NORTHUMBERLAND (48).

Morpeth (Sheepwash)— <i>Observer moved.</i>	Newcastle (Portland Road).
„ (Cresswell)— <i>Gauge leaked.</i>	Haydon Bridge.
Deadwater— <i>Observer moved.</i>	Morpeth (Bothalhaugh)
	Rochester (Byrness).
	Alwinton (Biddlestone).

CUMBERLAND (55).

Helvellyn (Birkside)— <i>Obs. ceased.</i>	Scafell Pike.
Penrith (Sandath House)— <i>Obs. ceased.</i>	Esk Hawse.
Carlisle (Scotby)— <i>No reply.</i>	The Stye.
	Gabel Howe.
	Ullscarf.
	Helvellyn (Birkside).
	Wythburn.
	Rosthwaite (Castle Lodge).
	Armboth.
	„ Fell (The Pewitts).
	Helvellyn (Whiteside).

Had it not been for damage resulting to some of his gauges from the severity of the frost on some of the mountains, Mr. Maitland would have been able to supply an even larger addition to our returns from the Scafell district than he has done. It is not, however, for him to command the elements, although the gentleman who contrives to keep a perfect record

of the fall of rain on Scafell Pike, 3,200 feet above the sea, ought to do so if anybody could. Keeping up such a system as Mr. Maitland is doing involves an outlay of both physical strength and of money, for which he deserves the thanks of all interested in the subject.

We are also indebted to Mr. J. F. Bateman, C.E., F.R.S., for a series of six returns from stations surrounding Thirlmere. Our readers will recollect that a few years back the Corporation of Manchester purchased the Lake, and obtained Parliamentary powers to take the water to Manchester. These gauges were erected by Mr. Bateman in connection with that Act, and will henceforth form part of the Manchester Water Works system.

WESTMORELAND (32).

Kendal (Highgate)— <i>No reply.</i>	Tebay Vicarage.
Staveley (Hill Cottage)— <i>Observer left.</i>	Appleby.
Windermere Hazelthwaite— <i>No observations.</i>	
Haweswater (Mardale Green)— <i>Gauge leaky.</i>	
Crosby Ravensworth (Reagill)— <i>Record impft.</i>	

MONMOUTH (13).

Newport (Springfield)— <i>No reply.</i>	Tredunnoek.
„ (Cwm Tyllery)— <i>Observer left.</i>	Monmouth (Pentwyn).

WALES.

GLAMORGAN (18)

Merthyr Tydfil (Thomas Town)— <i>No obs.</i>	Cardiff (Landough).
	„ (Park Place).
	„ (Ely).
	„ (Lisvane).
	Swansea (George Street).
	Aberdare (Abernant).

CARMARTHEN (6).

Llandilo (Golden Grove)— <i>No reply.</i>	Llanelly Waterworks.
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PEMBROKE (10).

Narberth (Clynderwen).
Rosebush.

CARDIGAN (3).

Waenbwll (<i>See Montgomeryshire, in which County it appears to be.</i>)	Lampeter (St. David's College).
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BRECKNOCK (5).

Crickhowell (Glanusk Park)—*No reply.* | Brecknock (Christ College).

RADNOR (2).

Knighton (Heyhope)—*Record imperfect.* | Presteign (Hereford Street).

MONTGOMERY (14).

Machynlleth (Waenbwl).
Llanidloes (Llidiart-y-waun Schl)
„ (Dolenog)
Newtown (Llanwnog).
Llanwddyn (Daffrn-newydd).
„ (Hoel-y-ffrid).
„ (Cefnglas).

The second and third, and the last four, additions to this county owe their origin to the fact of the Liverpool Corporation having endeavoured to obtain the head waters of the river Severn as a supply for their city. In order to ascertain the amount of compensation water which the Liverpool authorities ought to send into the Severn, these gauges were erected by the Severn Commissioners, and as they declined to pay for their maintenance, after Parliament handed over the river Vyrnwy to the Liverpool Corporation, I have had the observations continued at my own expense. A number of other gauges were erected by the Liverpool authorities, and I think that it would have been well had they also been published, but on applying for copies for insertion, they were refused. Considering that we have in these pages the records from *every other municipality in Great Britain*, we can afford to smile at this action on the part of Liverpool, and form our own conclusions respecting it.

FLINT (7).

Treiddyn (Nant-y-ffrith)—*No observations.* |

DENBIGH (14).

Denbigh (Glan-y-wern)—*No reply.* | Nannerch (Penbedw Hall).

MERIONETH (10).

Mynfford Junction— <i>Obs. ceased.</i>	Dolgelly (Hengwrt).
Dolgelly (Nannau Park)— <i>No reply.</i>	Rhiwbrifdir.

CARNARVON (7).

Beddgelert (Bryn Gwynant)— <i>Obs. ceased.</i>	
Llanfairfechan— <i>Gauge overflowed.</i>	

ANGLESEA (6.)

| Bodewryd (Rhosybol)

The *name* of Mr. Pritchard's station is changed from "Llandyfrydog" to "Llanerchymedd (Llwydiarth Esgob)," the gauge has not been moved.

ISLE OF MAN (5).

| Douglas (Cronkbourne).

SCILLY (1).

JERSEY (4).

GUERNSEY (2).

ALDERNEY (No STATION).

SARK (No STATION).

SCOTLAND.

WIGTON (2).

KIRKCUDBRIGHT (11).

Ashbank [Dumfries]—*Observer left.* |

DUMFRIES (9).

Ecclefechan (Kirkconnel Hall)—*Return impft.*Langholm (Westwater)—*No observations.*Kirkpatrick Juxta (Broomlands)—*Obs. ceased.*

ROXBURGH (14).

Melrose (Dingleton Mains)—*No reply.* |

SELKIRK (1).

Borthwickbrae [Hawick]—*Record incorrect.* |Bowhill—*Record incorrect.*

PEEBLES (3).

Stobo Castle—*No reply.* |Cairnmuir—*Return imperfect.*

BERWICK (6).

| Coldstream (The Hirsell).

HADDINGTON (5).

Yester—*Obs. ceased.* |

EDINBURGH (24).

Lasswade (Bromieknowe)—*No reply*.
 Swanston—*Record imperfect*.

Pentland Hills (Crosswood).
 „ (Harper Rig).
 „ (Harehill).
 „ (Loganlea).
 „ (Clubbiedean).
 Mid Calder (New Park House).
 Gilmerton Station.

We are glad to notice here five new stations recently started in connection with the Water Works of the City of Edinburgh.

LINLITHGLOW (1).

Abercorn—*Obs. ceased*.

LANARK (10).

Dalziell House.
 Hamilton Waterworks

AYR (10).

| Old Cumnock.

RENFREW (16).

Mearns (Newton)—*No reply*.
 Wemyss Bay (Ferneliff)—*No reply*.
 Shaw's W.W. (Shiel Hill)—*Record impft.*
 „ (Spango Burn)—*Record impft.*

DUMBARTON (5).

Alexandria (Cameron House)—*No reply*.
 „ (Balloch Castle)—*Record impft.*
 Loch Lomond (Firkin)—*No reply*.

STIRLING (5).

| Ben Lomond.

BUTE (4).

ARGYLL (32).

Ardrishaig—*Return imperfect*. | Inverary Castle

CLACKMANNAN (1).

KINROSS (1)

Cleish Castle—*No reply*.

FIFE (11).

Dunfermline (Outh)—*Record imperfect*.
 Isle of May—*Return incorrect*.
 Elie—*No reply*.

Dunfermline (Keavil).
 Cupar (Kemback)
 „ (Asylum).

PERTH (30).

Kincardine (Tulliallan)— <i>No reply.</i>	| Callander (The Gart).
Auchterarder House— <i>Obs. ceased.</i>	| „ (Leny).
Aberfeldy Station— <i>Record imperfect.</i>	| Muthill (Orchil).
Pitlochrie (Bonskied)— <i>No reply.</i>	

FORFAR (13).

Montroseness— <i>Record imperfect.</i>	
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KINCARDINE (3).

Lawrence Kirk (Johnstone Lodge)— <i>No reply.</i>	Girdleness.
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ABERDEEN (20).

Aberdeen (Bon Accord St.)— <i>Observer ill.</i>	Aboyne Castle.
„ (Skene St.)— <i>Observer ill.</i>	Inverary Manse.
„ (Grammar School)— <i>Observer ill.</i>	| Kinnaird Head.

BANFF (2).

ELGIN (7).

Dava— <i>Return imperfect.</i>	|
Covesea Skerries— <i>Return incorrect.</i>	|

NAIRN (2).

WEST ROSS (12).

EAST ROSS (6).

Dingwall Station— <i>Return imperfect.</i>	| Tain (Springfield).
Tarbetness— <i>Return incorrect.</i>	|

WEST INVERNESS (15).

Portree House— <i>Record imperfect.</i>	|
Dunvegan— <i>Record imperfect.</i>	|

EAST INVERNESS (10).

| Aviemore Station.
| Beaully (Beaufort Castle).

SUTHERLAND (11).

| Invershin.
Kinbrace Station.
Forsinard Station.

CAITHNESS (8).

Altnabreac Station— <i>Record imperfect.</i>	
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ORKNEY (11).

SHETLAND (5).

It appears from the above that the records from Scotland show a decided falling off. There are 41 records absent which we had in 1879, and there are only 30 new ones.

IRELAND.

CORK (7).

Roche's Point—*Record imperfect.*

KERRY (8).

Cara (Lake Side)—*Gauge damaged.* | Valentia Observatory.

WATERFORD (5).

Waterford (Cappoquin)—*No reply.* |

TIPPERARY (7).

Nenagh (Luska Lodge)—*No reply.* |

LIMERICK (2).

Newcastle West—*Record imperfect.* | Limerick (Kilcornan).

CLARE (4).

WEXFORD (5).

KILKENNY (6).

WICKLOW (3).

CARLOW (3).

KILDARE (No STATION).

QUEEN'S COUNTY (3).

KING'S COUNTY (5).

Banagher—*No reply.* |

DUBLIN (6).

Kingstown—*Obs. ceased.* | Dublin (Phoenix Park).

Dublin (Belvedere Place)—*No reply.* |

Kilsallaghan (Corrstown House)—*No reply.* |

MEATH (3).

WESTMEATH (2).

LOUTH (4).

LONGFORD (1).

GALWAY (9).

| Ballinasloe (Garbally).

MAYO (3).

Hollymount (Cloona Castle)—*Record impft.* |

ROSCOMMON (No STATION).

SLIGO (4).

Ballinful (Ardtarmon Cottage)—*No reply.* | Mullaghmore.

LEITRIM (2).

Mohill—*No reply.*
Drumkeeran (Spencer Harbour)—*No reply.* |

CAVAN (3).

FERMANAGH (3).

| Brooksboro' (Colebrooke Park).

MONAGHAN (1).

ARMAGH (4).

DOWN (15).

Hilltown—*No reply.* | Rathfryland (Ballynagappoge).
Hillsborough (Anahilt)—*No reply.*
Kircubbin (Tubber-na-Carrig)—*Return impft.* |

ANTRIM (10).

Lisburn (Prospect Hill)—*Observer left.* | Antrim (The Manse).
| Bushmills (Dundarave).

LONDONDERRY (9).

Londonderry (Creggan Res.)—*No reply.* | Londonderry (Asylum).

TYRONE (12).

DONEGAL (11).

| Donegal (Revlín House).
| Dunfanaghy.

The changes in Ireland are not very important, and the general distribution of the stations remains much as in 1879. We are still without records from the counties of Kildare and Roscommon, and should be very glad of help in obtaining at least one from each.

SUMMARY.

We now arrive at the data requisite for a survey of the numerical strength of our staff, and in order to do so thoroughly we have prepared the following table :—

Number of perfect Rainfall Records utilized in each successive volume of British Rainfall from 1871 to 1880, both inclusive :—

	England.		Wales.		Scotland.		Ireland.		Total.
1871.....	1038	...	88	...	311	...	67	...	1504
1872.....	1154	...	86	...	319	...	71	...	1630
1873.....	1180	...	85	...	354	...	77	...	1696
1874.....	1216	..	88	...	336	..	87	...	1727
1875.....	1274	...	91	...	332	...	138	...	1835
1876.....	1357	...	108	...	352	...	165	...	1982
1877.....	1421	...	105	...	369	...	162	...	2057
1878.....	1435	...	117	...	353	...	166	...	2071
1879.....	1452	...	113	...	338	...	166	...	2069
1880.....	1501	...	127	...	326	...	160	...	2114

This shows on the whole a steady increase, but on closer examination one or two rather unsatisfactory features may be found. Of the total increase in the ten years, which is 610, 463 is due to England, leaving only 147 for Wales, Scotland, and Ireland. As it is in central Wales and in the centre and North-West of Scotland that new stations are most needed, the fact which the table shows of a continual decline in the number of Scotch records, from 369 in 1877 to 326 in 1880, is greatly to be regretted. The returns from Ireland, whence in 1860-61, I was only able to obtain 21, had risen to 67 by 1871 ; and through a grant made by the British Association in 1874 for the gratuitous supply of gauges, the Irish records were suddenly increased by more than 50 per cent., and they now stand at the satisfactory total of 160 ; but, as already mentioned, returns are much needed from Kildare and Roscommon.

OBITUARY.

WE are glad to have an exceptionally short list this year of observers removed from us by death. Only two were among the contributors to the 1860 rainfall table, viz. Messrs. Gillett and Moyle. Long as was Mr. Moyle's register, it was surpassed by Mr. Huyshe's, and still more by that of Mr. Brooke, which only required four years more to complete half a century. Six of the deceased observers had each continued his observations without change of locality during upwards of 28 years.

					Perfect yearly records.
Baker, T. D., Esq., Comberton Road, Kidderminster	C	1878	imp -79...	1	
Bigg, Capt., Swallowfield, Horsham	C	1873	imp -78...	5	
Blyth, H. E., Esq., Burnham Westgate, Norfolk.....	1840	imp-67	T 1876-78	30	
Bourne, J., Esq., Cleobury Mortimer, Shropshire	C	1862-64	T 1877-79 T.....	6	
Brooke, Rev. J., { Haughton Vic., Shiffnal.....	C	1835-46	T {	46	
Brooke, Rev. J., { Haughton Hall, ...	C	1847-80	.. {		
Brown, Mr. J., Rockingham Castle, Northampton...	C	1867-80	C.....	14	
Cantrell, C. S., Esq., Riding Court, Datchet		1870-80	.....	11	
Carter, Rev. J., Bridekirk, Cockermouth.....	C	1865-69	T.....	5	
Charlton, W. H., Esq., Hesleyside, Bellingham.....	C	1863-79	C.....	17	
Chichester, Capt., Far Town, Huddersfield		1867	imp -70 T	3	
„ Sir A. B., Arlington Court, Barnstaple		1871-79	.....	9	
Cholmeley, Rev. Dr., Findon, Worthing	C	1864-65, 72	T.	3	
*Gillett, G., Esq., { Paul's House, Taunton	C	1855-65	T {	14	
*Gillett, G., Esq., { Hovelands Terrace, Taunton	C	1874	imp -79 }		
Hankey, J. A., Balcombe Place, Cuckfield	C	1862-80	C.....	19	
Holthouse, Rev. C. S., Helidon Vicarage, Daventry	C	1875-80	.....	6	
Hurst, T., Esq., jun., Lauder Grange, Corbridge-on-Tyne		1875-80	C.....	6	
Huyshe, Rev. J., Clyst Hydon, Devon.....	C	1847-80	.....	34	
Lassell, W., Esq., F.R.S., { Starfield, Liverpool	C	1842-49	T.....	8	
Lassell, W., Esq., F.R.S., { Ray Lodge, Maidenhead	C	1866-70	T.....	5	
Lloyd, Rev. C. W., Aldham Rectory, Hadleigh	C	1851-79	T.....	29	
Marriot, J., Esq., Braybrooke, Rothwell		1865-78	.....	14	
„ J., Esq., Kibworth Harcourt, Leicester ...		1856	78 T.....	23	
*Moyle, M. P., Esq., Helston	C	1841	imp -74 T	33	
Robinson, Rev. W. P., D.D., Trinity College, Glen Almond, Perth.		1876	T.....	1	
Stanley, Mr. E., Stretham, Ely	C	1848-80	C.....	33	
Stansfeld, Rev. J., Coniston Cold Vicarage, Skipton		1875-79	.....	5	
Vidler, M., Esq., C.E., Walls End Cottage, Pevensay	C	1850-80	C.....	31	
Wynne, B. W., Esq., Garthewin, Abergyle ..		1874-77, 79	...	5	

RAINFALL AND METEOROLOGY
OF
1880.

ON THE METEOROLOGY OF 1880.

WITH NOTES OF SOME OF THE PRINCIPAL PHENOMENA.

[These Notes should be read in conjunction with those on Heavy Rains in 1880.]

JANUARY.

1st.—*Croydon, Addiscombe* (II). Very mild; lowest temp. 50° , highest 54° .—*Diss* (IV). A fine, warm day, with fresh S. wind.—*Babbacombe* (V). S.W. gale in night.—*Druid, Ashburton* (V). Heavy storm of wind.—*Stanley Vic.* (IX). Severe gale at night.—*Shap* (X). Great storm of wind.—*Melrose* (XII). S.W. gale for 12 hours.—*Lochbroom* (XVIII). Very wild day.—*Dowra* (XXIII). Very stormy.—*Killygarvan Glebe* (XXIII). S.W. gale all day.

7th.—*Strelley Hall* (VII). Thick fog.

13th.—*Exeter Institution* (V). 5 in. of S fell during the night.—*Crewkerne, Bincombe House* (V). Heavy S all day, with dense fog.

15th.—*Croydon, Addiscombe* (II). S 1 in. deep.

16th.—*Babbacombe* (V). Solar halo 10.30 to 11.30 a.m.

19th.—*Redhill, Oxford Road* (II). Min. temp. of year, 14° .—*Exeter Inst.* (V). The Exe frozen over.

20th.—*Gainford* (X). Skating on the river Tees.—*Workshop, Hodsock Priory* (VII). Min. temp. of year, $16^{\circ}5$.

22nd.—*Exeter Inst.* (V). The Exe in the tideway off Lypston frozen over.

26th.—*Croydon, Addiscombe* (II). Lowest temp. on grass, $5^{\circ}5$.—*Babbacombe* (V). Very cold day; max. in shade only $28^{\circ}3$.

27th.—*Croydon, Addiscombe* (II). Dense fog at 8 a.m., houses invisible at 50 yards.—*Killygarvan Glebe* (XXIII). Strong S.S.W. gale all day.

28th.—*Croydon, Addiscombe* (II). Dense fog nearly all day.

29th.—*Croydon, Addiscombe* (II). Dense fog 11.30 a.m. to 2.30 p.m. Lowest temp. of month, $14^{\circ}9$.

30th.—*Croydon, Addiscombe* (II). Soil in garden frozen to the very unusual depth of $12\frac{1}{2}$ in.—*Littlehampton* (II). Violent squalls at 10 a.m. and 1 p.m.; R, H, T, and L; trees, chimneys, &c., blown down.

31st.—*London, Springfield Road*. (I). Extremely dense fog; about 9 a.m. carts in road invisible to persons on the footpath—*Bromley Common* (II). Bees seen about.

FEBRUARY.

2nd to 5th.—*Enfield* (I). Dense fogs.

5th.—*Croydon, Addiscombe* (II). Lowest temp. of month $24^{\circ}3$, and on grass $16^{\circ}3$. A cold mist, like a sea fog, passed over about noon.—*St. Lawrence* (II). Snowdrops in bloom.

6th.—*Babbacombe* (V). Solar halo.—*Kilconnell* (XXII). Storm from S.W.—*Knockan* (XXIII). Very high wind.

8th.—*Melrose* (XII). Daisies in bloom.

9th.—*Cambridge, Merton Villa* (III). Strong S.W. gale at night.—*Ross* (VI). Heavy gale.

10th. *Littlehampton* (II). Solar halo.—*Babbacombe* (V). Solar halo and parhelia.—*Miltown Malbay* (XX). TS with H.

11th.—*Miltown Malbay* (XX). TS, with H and high wind.

13th.—*Croydon, Addiscombe* (II). Duration of sunshine 8 hours.—*Kilconnell* (XXII). S.S.W. gale.—*Knockan* (XXIII). Very high wind.

14th.—*Ross* (VI). T.

16th.—*Croydon, Addiscombe* (II). Highest velocity of wind in any one hour, 30 miles; direction S.S.E.—*Arlington Court* (III). Unusually low bar., and gale commencing from S.E., and veering to N.W.—*Readlesham Hall* (IV). Gale from S.E.—*Diss* (IV). Heavy gale from S.—*Babbacombe* (V). Heavy S.S.W. gale; wind 59 miles an hour from noon to 1 p.m.—*Druid, Ashburton* (V). Heavy storm all day.—*Winsford* (V). Hurricane with driving R from S.E.

16th.—*Walton-on-the-Hill* (VIII). Very stormy.—*Llanfrechfa Grange* (XI). Very heavy gale.—*Annanhill* (XIV). Gale.—*Dalnaspidal* (XVI). Gale.—*Forsinard* (XIX). High wind.—*Watten* H.R.S. (XIX). Very stormy towards night.

16th to 19th.—*Stroud Upfield* (VI). S.S.W. gales, with heavy R and L on the latter day.

17th.—*St. Leonards* (II). Heavy gale.—*Melrose* (XII). Snowdrops in bloom.

18th.—*Shap* (X). Gale all day, with 1·01 in. of R.—*Newcastle West* (XX). Stormy, lunar halo and L.

19th.—*Croydon, Addiscombe* (II). Highest velocity of wind in any one hour 30 miles; direction S.W.—*St. Lawrence* (II). Crocus in flower.—*Shap* (X). Gale all day, with 2·37 in. of R.—*Miltown Malbay* (XX). TS, with H, and S.W. gale.

20th.—*Pinner Hill* (I). T.—*Croydon, Addiscombe* (II). A winter aconite, under a S. wall, first in flower.—*Addington* (III). T and L in evening.

21st.—*St. Lawrence* (II). Blue single hepatica in flower.

22nd.—*Croydon, Addiscombe* (II). Short shower of H at 2.25 p.m.

25th.—*Croydon, Addiscombe* (II). A snowdrop, under a S. wall, first in flower.

26th.—*Enfield* (I). Sharp TS.—*Bushmills* (XXIII). Gale.

27th.—*Littlehampton* (II). Remarkably bright mock suns from 7.30 to 8 a.m.

28th.—*Stonor Park* (III). First primrose and daisy in flower.

29th.—*Dalnaspidal* (XVI). Gale.—*Miltown Malbay* (XX). Severe S.W. gale.

MARCH.

1st.—*Abinger* (II). Stormy.—*Littlehampton* (II). Strong S.W. wind.—*St. Leonards* (II). Gale from W.—*Addington* (III). High wind.—*Cambridge, Merton Villa* (III). S.W. gale.—*Diss* (IV). Gale from S.W.—*Cheadle* (VI). Strong W. to S.W. wind.—*Worksop, Hodsock Priory* (VII). Gale.—*Walton-on-the-Hill* (VIII). Very stormy; S.—*Wakefield, Stanley Vic.* (IX). Wind and S.—*Shap* (X). Great storm of wind.—*Tipperary* (XX). Storm at night.—*Belvedere* (XXI). S.—*Kilconnell* (XXII). Very severe storm from N.W., with heavy H and S in night.—*Dowra* (XXIII). N.W. gales; S.—*New Barnsley* (XXIII). Stormy, with S showers.—*Killygarvan* (XXIII). Heavy squalls, with H and R.

1st and 2nd.—*Castle Malgwyn* (XI). Stormy.—*Dava* (XVIII). S.—*Fermoy* (XX). Stormy.

2nd.—*London, Springfield Road* (I). Strong S.W. gale all day.—*Abinger Hall* (II). Strong wind.—*Croydon, Addiscombe* (II). Highest velocity of wind in any hour, 33 miles; direction, W.S.W.—*Littlehampton* (II). Rough gale, S.S.W.—*St. Leonards* (II). S.W. gale.—*St. Lawrence* (II). Gale.—*Addington* (III). Gale.—*Cambridge, Merton Villa* (III). Hard S.W. gale.—*Wetherden* (IV). Heavy gale all night.—*Diss* (IV). Very heavy S.W. gale.—*Hindringham* (IV). TS.—*Alder-*

bury (V). Great storm all day.—*Druid, Ashburton* (V). Heavy storm.—*Langtree Wick* (V). A tremendous storm of wind from S.W.—*Headle* (VI). Ground covered with S; strong wind.—*Coston* (VII). Very stormy.—*Strelley Hall* (VII). TS, with H; .65 in.—*Walton-on-the-Hill* (VIII). Very stormy, with R and S; total fall, 1.48 in.—*Wakefield, Stanley Vic.* (IX). S.—*Shap* (X). Gale, with R, H, and S.—*Llanfrechfa* (XI). Heavy wind and R.—*Rhug* (XI). High wind; very wet, 2.35 in. of R.—*Watten* (XIX). Very stormy.—*Castle Lough* (XX). T.—*Ballinasloe* (XXII). Squally.—*Dowra* (XXIII). N.W. gale.

1st to 3rd.—*Rendlesham Hall* (IV). Gale.—*Babbacombe* (V). Violent W.S.W. gale, exceeding a velocity of 50 miles in each of the 8 consecutive hours from 6 p.m. on 2nd, to 2 a.m. on 3rd.—*Cheltenham* (VI). Tempest, with H and R.—*Port Madoc* (XI). Stormy.—*Newcastle West* (XX). Stormy.—*Miltown Malbay* (XX). S.W. gales, with T and L each day; rainfall on 1st and 2nd 2.11 in., causing great floods on the latter day.

3rd.—*Addington* (III). Large flood.—*Worksope, Hodsock Priory* (VII). H at night.

7th.—*Wakefield, Stanley Vic.* (IX). Rooks building.

9th.—*St. Lawrence* (II). Wood anemone in flower.

10th.—*Addington* (III). T in early morning.—*Cambridge, Merton Villa* (III). Distant T and L till 6 a.m.—*Coston* (VII). T and L between 5 and 6 a.m.—*Jersey, St. Aubins* (XI). A shock of earthquake was felt in this island, at seven minutes past midnight, Greenwich time. Several people were roused from their sleep, but no damage is reported.

13th.—*Croydon, Addiscombe* (II). Dense fog till 10 a.m.; a house 40 yards distant quite hidden from view.

15th.—*Croydon, Addiscombe* (II). A peach on a S. wall first in flower—nearly a month earlier than in 1879.

18th.—*Croydon, Addiscombe* (II). Duration of sunshine 10 hours.

20th.—*Croydon, Addiscombe* (II). A Japanese quince (*cydonia japonica*) on an east wall first in flower, 11 days earlier than in 1879.

24th.—*Croydon, Addiscombe* (II). Lowest temp. of the month on grass 16°.3.—*Strelley Hall* (VII). Min. in stand 26°.4.

25th.—*Croydon, Addiscombe* (II). In the course of the 24 hours a rise of temp. amounting to 35°, which was succeeded by a fall of 32°, took place.—*Cambridge, Merton Villa* (III). Sulphur, tortoise-shell, and small white butterflies out.—*Strelley Hall* (VII). Max. in stand 58°.7.

26th.—*Babbacombe* (V). Solar halo.

27th.—*Babbacombe* (V). Solar halo.

29th.—*Croydon, Addiscombe* (II). Lowest temp. of the month $25^{\circ}8$.
—*Addington* (III). Very sharp frost ; min. temp. 23° .

30th.—*Littlehampton* (II). Sharp frost, garden pump frozen.—*St. Lawrence* (II). White butterfly seen.

31st.—*Croydon, Addiscombe* (II). A rainless period, lasting 23 days, came to an end. Continued R from 1 p.m. ; amount $\cdot 31$ in.—*St. Lawrence* (II). First dish of asparagus.

APRIL.

1st.—*Littlehampton* (II). T and H.

3rd.—*Coston* (VII). TS about 1 p.m.—*Partney* (VII). T and L.—*Strelley Hall* (VII). T.

4th.—*Croydon, Addiscombe* (II). A pear on a west wall first in flower, rather more than a fortnight earlier than in 1879.—*Strelley Hall* (VII). TS in morning.

5th.—*Babbacombe* (V). S.W. gale.—*Strelley Hall* (VII). TS, distant ; only a few drops of R here.—*Melrose* (XII). T, and L, with H.

6th.—*Pinner Hill* (I). L and T.—*Abinger Hall* (II). Very severe TS, with heavy H, doing much damage to vegetation.—*Littlehampton* (II). T and H.—*Addington* (III). T and heavy showers.—*Oxford, Magdalen Coll.* (III). T.—*Compton Bassett* (V). T and L.—*Trowbridge, Holt* (V). The first visitation of T and L this year.—*Cheltenham* (VI). Very heavy H at 2 p.m.—*Coston* (VII). Frequent T in the distance.—*Partney* (VII) T.—*Strelley Hall* (VII). T.

7th.—*Croydon, Addiscombe* (II). T in W., 2.30 p.m., and in N.W. 3.15 p.m.—*St. Lawrence* (II). Wryneck heard.—*Addington* (III). Stormy ; T.—*Oxford, Magdalen Coll.* (III). T.—*Compton Bassett* (V). T.—*Sansaw Hall* (VI). Heavy R, H, and T.

8th.—*Pinner Hill* (I). T, with H.—*Enfield* (I). Violent TS, with H.—*Croydon, Addiscombe* (II). TS, 1.5 p.m. to 1.20 p.m. Lowest temp. of month, $34^{\circ}2$.—*St. Lawrence* (II). L and T at 1 p.m.—*Addington* (III). T, R, and H.—*Compton Bassett* (V). T and L, 5 p.m.

14th.—*Littlehampton* (II). Swallow seen.

14th and 15th.—*Crewkerne, Bincombe House* (V). Very wet, cold days ; temp. 47° in the day, and 39° at night ; wind N.E.

15th.—*Littlehampton* (II). Nightingale first heard.—*St. Lawrence* (II). First swallow seen.—*Malden, Norton Hall* (IV). 1.03 in. R fell in about half-an-hour, causing very sudden and deep floods, damaging

roads, &c., &c.—*Rendlesham Hall* (IV). TS.—*Diss* (IV). Distant T. Swallow first seen.—*Babbacombe* (V). Fog.

17th.—*Cambridge, Merton Villa* (III). Nightingale arrived.—*Alderbury* (V). Nightingale and cuckoo heard.

17th and 18th.—*Kilconnell* (XXII). Strong storm from S.S.W.

18th.—*Babbacombe* (V). S.W. gale.—*Kilworthy* (V). Stormy.—*Wakefield, Stanley Vic.* (IX). A swallow seen.—*Annanhill* (XIV). S.S.W. gale.—*Miltown Malbay* (XX). Severe storm, wind S. to S.W.—*Killygarvan* (XXIII). Heavy gale.

20th.—*St. Lawrence* (II). Nightingale heard.—*Diss* (IV). Nightingale heard.—*Worksoy, Hodsock Priory* (VII). Distant T.—*Kilconnell* (XXII). S.W. gale.

20th and 21st.—*Miltown Malbay* (XX). Heavy storm, with deluge of R, causing floods ; wind S.W. to W.

21st.—*St. Lawrence* (II). Cuckoo heard.—*Babbacombe* (V). S.W. gale.—*Cheltenham* (VI). Very stormy night.—*Sansaw* (VI). First swallow seen.—*Wakefield, Stanley Vic.* (IX). A strong gale in the night.—*Elterwater* (X). Stormy day, wind extremely violent.—*Shap* (X). A dreadful storm of wind and R.—*Castle Malgwyn* (XI). Stormy.—*Melrose* (XII). S.W. gale.—*Annanhill* (XIV). S.S.W. gale ; H.—*Dowra* (XXIII). Continuous R and floods.

22nd.—*St. Leonards* (II). Gale in early morning.—*Diss* (IV). Cuckoo heard.—*Ross* (VI). T and L, with H in afternoon.—*Strelley Hall* (VII). T.—*Melrose* (XII). Tweed in high flood.

23rd.—*Croydon, Addiscombe* (II). Duration of sunshine 11 hours 48 minutes.

25th.—*Crichton Inst.* (XII). Very heavy H.

26th.—*St. Lawrence* (II). Lilac in bloom.—*Babbacombe* (V). S.—*Sansaw* (VI). Cuckoo heard.—*Partney* (VII). T and H.—*Melrose* (XII). Swallows arrived.

27th.—*Croydon, Addiscombe* (II). An espalier apple first in flower ; three weeks earlier than in 1879.—*Babbacombe* (V). Solar halo and mock sun.—*Coston* (VII). Cuckoo first heard.

30th.—*Croydon, Addiscombe* (II). Lowest temp. on grass, 25°·8.—*Strelley Hall* (VII). Min. in shade, 28°·4.

MAY.

1st.—*Abinger Hall* (II). Severe frost.—*Croydon, Addiscombe* (II). Duration of sunshine, 12 hours 12 minutes.—*Addington* (III). Sharp frost.

2nd.—*Abinger Hall* (II). Hard frost.—*Croydon, Addiscombe* (II). Lowest temp. of month, 30°.—*Miltown, Malbay* (XX). Heavy N.E. gale, with showers of H.

3rd.—*London, Springfield Road* (I). T and L, 3.30 to 3.45 p.m., with a few large drops of R.—*Enfield* (I). Distant T. Dense fog in morning.—*Abinger Hall* (II). TS.—*St. Lawrence* (II). Distant T.—*Langton Herring* (V). Severe TS.—*Babbacombe* (V). L.—*Ashburton, Druid* (V). T and L.—*Winsford* (V). T.—*Exeter Inst.* (V). A very severe TS broke over the city ; the lightning struck three large elm trees.—*Gittisham* (V). Heavy TS.—*Ross, The Graig* (VI). Heavy TS at 2 p.m.

6th.—*Melrose* (XII). Distant T.

9th.—*Strelley Hall* (VII). Min. temp. in stand, 31°·2 ; last frost of the spring.

11th.—*Addington* (III). Some H fell ; very much heavier a few miles distant.—*Oxford, Magdalen Coll.* (III). Storm of H.

12th.—*Miltown Malbay* (XX). Distant T.

15th.—*Littlehampton* (II). T.—*St. Leonards* (II). TS over the sea.—*St. Lawrence* (II). L and T.—*Langton Herring* (V). Severe TS.—*Babbacombe* (V). T.

18th.—*Croydon, Addiscombe* (II). From the 25th of April to this date, or for 23 consecutive days, the wind blew uninterruptedly from one or other of those points of the compass between N. and E.—*Littlehampton* (II). Gale.

20th.—*Ashburton, Druid* (V). Very hot day ; max. in shade, 76°.—*Trowbridge, Holt* (V). Max. shade temp., 75°·1.

21st.—*Croydon, Addiscombe* (II). Relative humidity at 3 p.m., 34°.—*Killygarvan* (XXIII). Gale at night.

22nd.—*Seaforde* (XXIII). Large H stones.

24th.—*St. Leonards* (II). Gale from W.S.W.—*Melrose* (XII). Gale S.W.—*Lochbroom* (XVIII). Stormy ; T, L, and H ; S on hills.—*Watten* (XIX). Gale.

25th.—*Croydon, Addiscombe* (II). Cut the first bloom from a Gloire de Dijon rose, on an east wall ; rather more than a fortnight earlier than in 1879, and about a week later than in 1878.—*Lochbroom* (XVIII). Very stormy.

26th.—*Isleworth, Spring Grove* (I). Grand display of L.—*Wood Green* (I). Sheet L.—*Enfield* (I). L and T.—*Redhill, Oxford Road* (II). Max. temp. of year, 83°.—*Croydon, Addiscombe* (II). Highest temp. of month, 81°·2. Relative humidity at 3 p.m., 33 ; L in E 8 p.m.,

and in E.N.E. 8.50 p.m.—*Bromley Common* (II). L.—*Addington* (III). T and L.—*Northampton* (III). L and T.—*Cambridge, Merton Villa* (III). TSS.—*Diss* (IV). Sharp TS to E.—*Pewsey* (V). T.—*Langton Herring* (V). Slight TS.—*Babbacombe* (V). TS.—*Winsford* (V). Distant T.—*Coston Rect.* (VII). T and L during night.—*Strelley Hall* (VII). T during afternoon; R at 9 p.m. Max. in shade, 71°·8.—*Killygarvan* (XXIII). Gale.

28th.—*Enfield* (I). H showers.—*Tenterden* (II). TSS; severe H three miles distant.—*Littlehampton* (II). T and H.—*St. Leonards* (II). TS.—*Ellough Rect.* (IV). H fell, the size of marbles.—*Cheltenham* (VI). TS, with H.—*Cheadle* (VI). H storm; soon after 9 a.m. temp. fell from 53° to 42°.—*Partney* (VII). TS.—*Crichton Inst.* (XII). Heavy H shower.

JUNE.

2nd.—*Croydon, Addiscombe* (II). The gooseberry-caterpillar first made its appearance, and afterwards did much injury.

3rd.—*Miltown Malbay* (XX). N.E. gale.

4th.—*Elchies* (XVII). Hill-tops covered with fresh S for several hours.

5th.—*Croydon, Addiscombe* (II). Lowest temp. on grass, 27°·6.—*Addington* (III). Frost on ground; plants blackened.—*Stonor Park* (III). Potatoes injured by frost.—*Strelley Hall* (VII). Min. on grass, 32°; last frost of the season on grass.

6th.—*Killygarvan* (XXIII). W.N.W. gale.

7th.—*St. Leonards* (II). Gale from W.S.W.—*Diss* (IV). Sharp TS to N. at 0·30 p.m.—*Coston Rect.* (VII). T and L about midday.—*Strelley Hall* (VII). Slight TS in afternoon.—*Keith, H.R.S.* (XVII). Heavy H shower.

8th.—*Babbacombe* (V). S.W. gale.—*Worksop, Hodsock Priory* (VII). H, 2 p.m.—*Ilkley, West Parade* (IX). S fell in the afternoon, whitening the hills on both sides of the valley. Min. temp. 35°.—*Kemback* (XVI). Heavy showers of R and H.—*Dalnaspidal* (XVI). Distant T.

9th.—*Loughborough* (VII). T, with H.—*Worksop, Hodsock Priory* (VII). Distant T, p.m.—*Castle Malgwyn* (XI). A heavy H storm, lasting 25 minutes, and covering the ground.—*Corwen, Rhug* (XI). TS, with H.

10th.—*Worksop, Hodsock Priory* (VII). TS, 3 to 4 p.m.—*Melrose, Abbey Gate* (XII). T and L.—*Newtownards* (XXIII). Severe frost; potatoes injured in boggy lands.

14th.—*Pinner Hill* (I). TS.—*Alderbury* (V). TS.

17th.—*Croydon, Addiscombe* (II). Heavy storm, 11.30 a.m. to 0.25 p.m., followed by lighter R to 1 p.m.; amount, .56 in.

18th.—*Abinger Hall* (II). Hot day; T.—*Croydon, Addiscombe* (II). Duration of sunshine, 13 hours 24 minutes.—*Littlehampton* (II). Dull and hot; T.—*St. Lawrence* (II). Distant L and T.—*Compton Bassett* (V). T at 2 p.m.—*Trowbridge, Holt* (V). From 11.45 a.m. to 2.30 p.m. a heavy T storm, during which 0.54 in. of R fell in three-quarters of an hour.—*Castle Malgwyn* (XI). TS.

18th and 19th.—*Castle Lough* (XX). T.

19th.—*Diss* (IV). TS.—*Babbacombe* (V). L, T, and heavy R.—*Bucknall* (VII). T and H; 1.54 in. of R.—*Partney* (VII). TS.—*Walton-on-the-Hill* (VIII). TS, 7.30 to 8 p.m.—*Miltown Malbay* (XX). T and L.

20th.—*Ballinasloe* (XXII). T at 2 p.m.

21st.—*Strelley Hall* (VII). Slight TS in afternoon.—*Melrose, Abbey Gate* (XII). Severe TS.—*Dalnaspidal* (XVI). T at 7 p.m.—*Castle Lough* (XX). T and L.—*Killygarvan* (XXIII). TS.

22nd.—*Addington* (III). TS at midday.—*Stonor Park* (III). TS; .50 in. of R fell between 10 and 11 a.m.—*Oxford, Magdalen Coll.* (III). TSS; 1.25 in. of R.—*Diss* (IV). TS at 7 p.m., and heavy R all night.—*Babbacombe* (V). T and heavy R; .27 in. in 11 minutes, and .62 in. in 30 minutes.—*Druid, Ashburton* (V). T and L in night.—*Cheltenham* (VI). Heavy TS 4 to 7 p.m.—*Bickenhill Vic.* (VI). TSS.—*Coston Rect.* (VII). T and L between 4 and 5 p.m.—*Strelley Hall* (VII). Heavy TS 2 to 6 p.m.—*Worksope, Hodsock Priory* (VII). Much distant T.—*Corwen, Rhug* (XI). Heavy TS.—*Tomintoul* (XVII). .81 in. of R fell in half-an-hour.—*Lochbroom* (XVIII). T, L, and heavy R.—*Glennville* (XX). T and L; .98 in. of R fell in about half-an-hour.—*Newcastle West* (XX). T and L.

23rd. *Bromley Common* (II). T.—*Addington* (III). TS in afternoon. *Stonor Park* (III). .40 in. of R fell between 2 and 2.30 p.m.—*Northampton* (III). T, L, H and R.—*Cambridge, Merton Villa* (III). T and L.—*Diss* (IV). Heavy TS with H at 3 p.m.—*Compton Bassett* (V). Distant T.—*Market Harborough* (VII). Nearly 1 in. of R fell in 30 minutes.—*Thorpe Arnold* (VII). Severe TS, with much H.—*Loughborough* (VII). TSS with heavy R; 0.84 in. fell between 0.35 p.m. and 1.35 p.m., and 0.40 in. between 4.55 and 5.20 p.m.; total fall in the 24 hours, 1.25 in.—*Coston Rectory* (VII). TSS.—*Strelley Hall* (VII). Severe TS, beginning at 4 p.m. and lasting long into the

night ; 1·15 in. of R fell.—*Castle Lough* (XX). T and L.—*Ballinasloe* (XXII). L at 3.15 p.m. and heavy R ; ·30 in. in 20 minutes.

23rd and 24th.—*Cheltenham* (VI). T.

23rd, 24th, and 25th.—*Enfield* (I). TSS.—*Pinner Hill* (I). TSS.

24th.—*Tenterden* (II). TSS nearly all day, with heavy R ; ·24 in. fell in $7\frac{1}{2}$ minutes.—*Gowdhurst Vic.* (II). A TS commenced about 3 p.m. ; the L was not very frequent or very close, save one or two flashes, but it was followed by the most violent hailstorm that has occurred during the past 16 years. The hailstones were round, and at first of moderate size, which gradually increased to that of small marbles, doing great damage to glass, and in the gardens ; yield of R and H 1·26 in.—*St. Lawrence* (II). Splendid solar halo.—*Addington* (III). Solar halo.—*Assenton* (III). Solar halo noon to 4 p.m.—*Northampton* (III). T, L and R.—*Cambridge, Merton Villa* (III). T and L.—*Loughborough* (VII). Severe TSS in afternoon.—*Strelley Hall* (VII). Heavy TS 1 to 4 p.m. ; ·83 in. of R.

25th.—*Hackney, Richmond Road* (I). TS with heavy R between 3.50 and 7 p.m., 2·28 in. ; L quite close.—*Hampstead, Branch Hill* (I). Heavy R in afternoon and evening, 1·55 in.—*Enfield* (I). Heavy TS, with 1·10 in. of R.—*Tenterden, Summerhill* (II). Violent H storm, doing much damage.—*Wootton Rec.* (III). 1·27 in. of R fell in about 12 hours.—*Orford, Magdalen Coll.* T and L, 1·33 in. of R.—*Leyton Observatory* (IV). Very heavy TS ; 1·00 in. of R fell in 2 hours.—*Strelley Hall*. (VII). Thick fog in the morning.—*Borrowdale, Castle Lodge* (X). T and L.—*Melrose, Abbey Gate* (XII). T and L.—*Twyford* (XXI). 3·07 in. of R fell in about an hour and a quarter.

25th and 26th.—*Bromley Common* (II). T.

26th.—*Enfield* (I). T.—*Abinger Hall* (II). Heavy TS during day.—*Croydon, Addiscombe* (II). Heavy showers during the afternoon ; TS 0.40 to 0.58 p.m. ; amount of R ·32 in.—*St. Leonards* (II). TS.—*Stonor Park* (III). T, L and heavy R ; ·65 in. fell between 0.15 and 1.15 p.m.—*Alderbury* (V). TS.—*Langton Herring* (V). T.

30th.—*Worksop, Hodsock Priory* (VII). Heavy R at 6 p.m. ; ·29 in. fell in scarcely 15 minutes.

JULY.

1st.—(I). *Muswell Hill*. L and T.—*Enfield* (I). Heavy TS.—*Leyton Observatory* (IV). Very heavy TS.

2nd.—*Newtownards* (XXIII). TS ; 1·34 in. of R fell in one hour.—*New Barnsley* (XXIII). T, and 1·43 in. of R.

3rd.—*Muswell Hill* (I). L and T.—*Pinner Hill* (I). TS.—*Enfield* (I). Heavy TS.—*Norwich, Dicklebro' Place* (IV). 0·60 in. R fell between 1.30 p.m. and 2 p.m., and 0·28 in. between 5.20 p.m. and 5.30 p.m.—*Ross, The Graig* (VI). TS, 1 p.m.—*Melrose* (XII). TS, ·43 in. of R in one hour.

7th.—*St. Leonards* (II). Gale.—*Worksop, Hodsock Priory* (VII). TS 9.30 a.m.—*Dalnaspidal* (XVI). R and T.—*Keith* (XVII). TS and 3·25 in. of R ; 2·16 in. fell between 2.30 and 4.30 p.m.

8th and 9th.—*Melrose* (XII). T and L.

9th.—*Kilworthy Hill* (V). Tremendous TS, with great downpour of R, for an hour and a half ; the River Tavey rose higher than was ever known before.—*Sansaw* (VI). T.—*Loughborough* (VII). L and T.—*Strelley Hall* (VII). T.—*Findern* (VII). In half an hour, ·65 in. of R fell.—*Newtownards* (XXIII). Thundershower.—*New Barnsley* (XXIII). T.

10th.—*Abinger Hall* (II). Heavy TS.—*Croydon, Addiscombe* (II). Heavy shower, 0.30 p.m. ; showery till 3 p.m. ; heavy shower, 5.20 p.m., with distant T ; amount of R, ·24 in.—*Bromley Common* (II). Heavy T showers.—*Northampton* (III). T, L, and R ; a man killed by the L.—*Ross, The Graig* (VI). TS 2 to 4 p.m. ; ·67 in. of R in 15 minutes.—*Partney* (VII). Three waterspouts observed on the neighbouring hills.—*Strelley Hall* (VII). T all the afternoon.—*Melrose* (XII). Severe TS, with R and H ; an ash tree, near the town, struck.

11th.—*Watten* (XIX). T.

12th.—*Rhug* (XI). Heavy TS.—*Port Madoc* (XI). TS, 1·28 in. of R.

12th to 15th.—*Sansaw* (VI). T daily.

12th to 17th.—*Walton-on-the Hill* (VIII). T daily.

13th.—*Stockton* (VI). R fell in torrents from 4.30 till 6 p.m., with violent H, which lay thick on the ground, the village children snow-balling till dark. The gauge read 1·72 in. at 6 p.m., but the H choking the tube probably made the register inadequate. T and L were almost continuous during two hours. The storm began again at 3 a.m. on the 14th, the R being not less heavy, with no H, and little T. The first fall was preceded by an unusual current of air, which lowered the temperature from between 70° and 80° to 37°. There was scarcely any ozone.—*Loughborough* (VII). L and T.—*Coston* (VII). Torrents of R with T, from 5 a.m. to 9 a.m. of 14th ; total rainfall for 13th, 1·27 in.—*Worksop, Hodsock Priory* (VII). TS, with heavy showers of R and H.—*Findern* (VII). 0·63 in. of R fell between 4 and 6 p.m., and 1·05 in. between 9 and 10 p.m.—*Walton-*

on-the-Hill (VIII). Severe TS 1 to 4 p.m.; sheet L at night.—*Dourra* (XXIII). TS.

13th and 14th.—*Amphill* (III). Heavy rainfall, 1·71 in.—*Leicester, Belmont Villas* (VII). Severe TSS, total for the two days, 2·16 in.

13th to 19th.—*Cambridge, Merton Villa* (III). L or T daily.

14th.—*London, Springfield Road* (I). Heavy TS from 0.30 to 1.15 p.m.; L very vivid and close.—*Muswell Hill* (I). L and T.—*Pinner Hill* (I). TS.—*Enfield* (I). Heavy TS.—*Croydon, Addiscombe* (II). A peculiar dense haze for some hours during the afternoon; frequent T, 0.40 to 1 p.m.; no R.—*St. Leonards* (II). TSS.—*Assenton* (III). TSS, and 2·30 in. of R.—*Stonor Park* (III). T and L, with large H, and very heavy R; 2·20 in. in the 24 hours.—*Oxford, Magdalen Coll.* (III). T, L, with H and R; 1·64 in.—*Northampton* (III). Heavy R all day; total fall, 1·74 in., causing a flood on the outskirts of the town, with destruction of property and loss of life.—*Sandy* (III). TS.—*March* (III). An extraordinary fall of R occurred, 2·13 in. being registered between 1.15 and 2.45 p.m.—*Wisbeach, Euximoor Ho.* (III). The most severe storm of R and H ever remembered.—*Compton Bassett* (V). TSS.—*Ross, The Graig* (VI). TS in afternoon and evening.—*Loughborough* (VII). L and T, with heavy R; 1·09 in.—*Coston* (VII). Heavy rains and TS; total fall, 1·55 in.—*Thorpe Arnold* (VII). Severe TS and 1·49 in. of R; great flood.—*Partney* (VII). TS, with heavy R.—*Strelley Hall* (VII). Severe TS in night; 1·08 in. of R fell.—*Bala* (XI). Severe TS and heavy R (1·70 in.), commencing at 9 p.m., and lasting nearly the whole night.—*Port Madoc* (XI). T; 1·67 in. of R.—*Kilrush* (XX). T and L.—*Miltown Malbay* (XX). T and L.—*Ballinasloe* (XXII). T.—*Kilconnell Rect.* (XXII). TSS throughout the day; notable, inasmuch as TSS are very rare in this district.

14th and 15th.—*Tipperary* (XX). TSS.

15th.—*Abinger Hall* (II). TS.—*Croydon, Addiscombe* (II). Again a peculiar dense haze in the afternoon; distant T in N.W. at 9 a.m.; no R.—*St. Leonards* (II). TSS.—*St. Lawrence* (II). L and T.—*Addington* (III). Severe TS.—*Silsoe* (III). 0·80 in. of R fell between 0.40 and 1.30 p.m.—*Coston* (VII). Flood rose rapidly almost to the height of that of July, 1875.—*Thorpe Arnold* (VII). Severe TS, and 1·50 in. of R; high flood.—*Strelley Hall* (VII). TS in the morning.—*Worksop, Hodsock Priory* (VII). TS, 8 a.m.—*Nantgwillt* (XI). Very heavy TS in morning.—*Glenville* (XX). T and L.

15th and 16th.—*Loughborough* (VII). L, T, and very high floods; some bridges on the Midland Railway washed down, and traffic

temporarily suspended. Many tons of hay floated away, and great damage done to property.

16th.—*Croydon, Addiscombe* (II). Distant T, 10.20 to 10.35 a.m., and again 6 to 6.30 p.m. ; no R. Highest temp. of month, 76°·2.—*St. Leonards* (II). TSS.—*Warbleton Rect.* TSS, 4 to 6 a.m. ; sweep of windmill struck, a cow and hens killed.—*Assenton* (III). Great TS ; rainfall, 2·26 in. ; water knee deep in the road.—*Stonor Park* (III). A tremendous storm of R (total fall, 2·35 in.), T and L between 9 and 11 p.m., rivalling in intensity that of August, 1879 ; 35 yards of wall, 10 ft. high, knocked down, and the front of a greenhouse carried away.—*Wetherden* (IV). Heavy TS ; some lambs killed not far distant.—*Strelley Hall* (VII). T at 4 p.m.

17th.—*Muswell Hill* (I). L and T.—*St. Leonards* (II). TS.—*Addington* (III). Severe TS and heavy R, 1·10 in.—*Diss* (IV). TS.—*Compton Bassett* (V). T and L in night.—*Trowbridge, Holt* (V). TS 4.30 to 6.15 p.m. *Stevenstone* (V). About 2 p.m. a tremendous R set in, accompanied by seevere T and L, which continued without cessation till 5 p.m., by which time 3·05 in. had fallen.—*Langtree Wick* (V). Heavy TS.—*Cheltenham* (VI). TS.—*Sansaw* (VI). Very heavy T.—*Loughborough* (VII). L and T.—*Coston* (VII). T and very vivid L.—*Strelley Hall* (VII). T with a few drops of R in night.—*Walton-on-the-Hill* (VIII). Severe TS 9.35 to 10.20 p.m.—*Broughton-in-Furness* (VIII). TS.—*Stanley Vic.* (IX). Most violent TS.—*Seathwaite* (X). T and L.—*Elterwater* (X). L and T in night, much damage done within a few miles.—*Llanfrechfa* (XI). Heavy T and L.—*Dolgelly* (XI). A very great flood in the river Wnion passing by Dolgelly. It came down, like an immense wave, between 5 and 6 in the afternoon, and continued flowing for 10 or 12 hours, sweeping all before it in the shape of trees, rails, &c. As many as five bridges (small of course) were thrown down between Dolgelly and Bala, and all communication was interrupted for three weeks. It was the largest flood known here since the year 1780 or thereabout, which is known as the "Great Flood."—*Trawsfynedd* (XI). Severe TS, commencing at 3 p.m. and continuing with great severity for an hour and a half ; L very frequent until about 4 a.m. on the 18th, but the T not so heavy and near. Two bridges to the S. of this place carried away by the flood or struck by L.—*Bala* (XI). Severe TS and vivid L from 2.30 till 9 p.m. ; heavy R (1·85 in.), and a waterspout at Llanuwchllyn ; several railway bridges washed away between that place and Dolgelly, and also the bridge over the Dee at Llanuwchllyn village.—*Rhug* (XI). TS.—*Castle Lough* (XX). T and heavy R, 1·20 in.

18th.—*Croydon, Addiscombe* (II). Short shower 11.40 a.m. with T, no R worth mentioning.—*Addington* (III). Very large flood, doing much damage to hay crop.—*Troubridge, Holt* (V). Distant T; .18 in. of R fell in a quarter of an hour.

19th.—*Diss* (IV). TS.

21st.—*Enfield* (I). Heavy TS.—*St. Leonards* (II). TS, 1.23 in. of R.—*Sandy* (III). TS.—*Compton Bassett* (V). T, L and heavy R, 1.10 in.—*Brecknock, Bridge Street* (XI). 1.30 in. of R fell between 6 and 9 p.m., causing a tremendous flood in the Usk.

21st and 22nd.—*Ross, The Graig* (VI). TSS.

22nd.—*Gillingham* (V). A fall of 1.15 in. of R took place during a storm with T, between 1.30 and 2.30 p.m.—*Langtree Wick* (V). 1.11 in. of R fell in about one hour.—*Taunton, Hovelands Terrace* (V). Heavy TS and 1.41 in. of R, the greater part of which fell in rather more than one hour.—*Sansaw* (VI). T.—*Ash Hall* (XI). 2.90 in. of R fell in 30 minutes from 1.50 to 2.20 p.m., accompanied by an immense quantity of ice in irregular-shaped pieces, measuring from half to three quarters of an inch in diameter.—*Bala* (XI). TS, vivid L, and heavy R; a waterspout between Llanuwchllyn and Bala; the road under Cerig Llwydion much cut up.

24th.—*Loughborough* (VII). L.—*Coston* (VII). T and L.—*Worksop, Hodsock Priory* (VII). TS 7 to 8 p.m.—*Port Madoc* (XI). TS.—*Castle Lough* (XX). T and L.—*Dowra* (XXIII). TS.—*Newtownards* (XXIII). TS.—*Buncrana* (XXIII). Severe TS.

25th.—*Croydon, Addiscombe* (II). Duration of sunshine, 13h. 36m.—*Loughborough* (VII). Solar halo and remarkable streaks of cirro-stratus in the evening.

26th.—*Enfield* (I). Heavy TS.—*Northampton* (III). L and T.—*Loughborough* (VII). L and T with heavy R (1.02 in.)—*Strelley Hall* (VII). TS from 2.30 to 5.30 p.m., and again about daylight; total fall, 1.30 in.

27th.—*Seathwaite* (X). T and L.

29th.—*Croydon, Addiscombe* (II). Heavy shower 2 p.m., amount .11 in.; T heard twice in W. at 1.50 p.m.; heavy TS at night, amount .68 in.—*St. Leonards* (II). Gale.—*Diss* (IV). TS.—*Loughborough* (VII). L and T with heavy R, .63 in.—*Strelley Hall* (VII). TS during afternoon and night, .61 in. of R.—*Douglas* (XI). .74 in. of R fell in two hours, 6 to 8 p.m.

29th and 30th.—*Cambridge, Merton Villa* (III). TSS.—*Sansaw* (VI). T.

30th.—*Croydon, Addiscombe* (II). Light R with distant T in N.W., passing to N.E., from 4.30 to 4.45 p.m.; amount of R, .02 in.—*St. Leonards* (II). Gale and TS.—*Babbacombe* (V). TSS.—*Druid, Ashburton* (V). Heavy TS.—*Ross, The Graig* (VI). TS 3.45 p.m.—*Cheltenham* (VI). Very heavy TS from noon to 4 p.m.—*Loughborough* (VII). L and T.—*Strelley Hall* (VII). TS at 5 p.m.

AUGUST.

2nd.—*Enfield* (I). TS.—*St. Lawrence* (II). L and T at 1.30 p.m.—*Cambridge, Merton Villa* (III). L and T at 8 p.m.—*Middlesborough* (IX). In 5 minutes .31 in. of R fell.—*Shap* (X). Distant T.—*Melrose* (XII). T and L, 4.30 p.m.

4th.—*Bushmills* (XXIII). 1.97 in. of R fell, the largest amount registered in 24 hours for many years.—*Carndonagh* (XXIII). TS.

5th.—*Whorlton* (X). TS.—*Watten* (XIX). TS at 2 p.m.

6th.—*Waresley Vic.* (III). 0.71 in. of R fell in one hour during a TS.—*Cambridge, Merton Villa* (III). TSS, with heavy R.—*Silsoe* (III). 1.18 in. of R fell between 1 and 2 p.m.—*Loughborough* (VII). L and T.—*Partney* (VII). Between 2.55 and 3.45 p.m. 1.29 in. of R fell, and on the adjacent hill above 3 in. fell, causing such a flood as had not been known here before.—*Whorlton* (X). TS.—*Rhug* (XI). TS.

7th.—*Littlehampton* (II). Gale.—*St. Leonards* (II). Gale from W.—*St. Lawrence* (II). Gale from N.W., from 6 to 11 p.m., the severest known here for some years.—*Addington* (III). Rapid fall of bar., with rough wind.—*Diss* (IV). Distant TS at 10.15 p.m.—*Alderbury* (V). Great storm after 5 p.m.—*Pewsey* (V). Very rough wind.—*Compton Bassett* (V). Hurricane at night.—*Babbacombe* (V). W. gale.—*Llanfrechfa Grange* (XI). Very high wind for 12 hours.—*Castle Malgwyn* (XI). Very rough N.W. wind; many trees blown down.—*Carndonagh* (XXIII). Distant TS.

8th.—*Cambridge, Merton Villa* (III). Sudden N.W. gale.—*Diss* (IV). TS at 6.30 p.m.

10th.—*Croydon, Addiscombe* (II). Duration of sunshine, 13 hours 18 minutes.—*St. Lawrence* (II). Aurora borealis at 10.30 p.m.—*Llanfrechfa Grange* (XI). T.

11th.—*Druid, Ashburton* (V). T.—*Strelley Hall* (VII). Max. in shade, 78°.

11th to 15th.—*Slough, Langley* (III). In the five days 4.88 in. of R fell.

12th.—*Ross, The Graig* (VI). Remarkable aurora from 10 to 11 p.m., with bright white streamers.—*Loughborough* (VII). Aurora borealis.—*Shap* (X). Magnificent display of aurora borealis.—*Crichton Inst.* (XII). Splendid display of aurora.—*Achonachie Lodge* [*Beaully*] (XVIII). Splendid aurora.

13th.—*Babbacombe* (V). Aurora borealis.—*Miltown Malbay* (XX). Aurora.

14th.—*Elterwater, Woodlands* (X). Distant T and L.—*Castle Lough* (XX). T and L.—*Kilrush* (XX). L and T.—*Miltown Malbay* (XX). Distant T and L.

15th.—*Castle Malgwyn* (XI). TS.—*Fermoy* (XX). T and L.—*Nenagh, The Lodge* (XX). TS.—*Castle Lough* (XX). Much T and L.—*Kilrush* (XX). T and L.—*Miltown Malbay* (XX). Much T and L, with H and R.—*Ballinasloe* (XXII). Violent TS, 2 to 9 p.m., and a heavy shower at 6.30 p.m.; .29 in. of R in 15 minutes.—*Kilconnell* (XXII). TS.—*Dowra* (XXIII). Distant TS.

21st.—*Croydon, Addiscombe* (II). A noble stonecrop (*sedum spectabile*) in an open border, first in flower; nearly three weeks earlier than in 1879.

24th.—*Hythe* (II). Storm commenced at midnight, and lasted till 5 a.m. on 25th; 2.07 in. of R; very heavy T and L.

25th.—*Bethersden* (II). TS, and 1.92 in. of R.—*Hythe* (II). TS, and 1.09 in. of R.—*Bromley Common* (II). T.—*Littlehampton* (II). Heavy storm, with L.—*W. Brighton, Blatchington Road* (II). Severe TS, with brilliant L; R, .62 in.—*St. Lawrence* (II). L and T at night.—*Diss* (IV). Heavy T, with H, 6 to 8 a.m.—*Babbacombe* (V). L.—*Coston Rect.* (VII). T and L at night.

26th.—*Enfield* (I). T and L.—*Abinger Hall* (II). TS at 4 a.m.—*Croydon, Addiscombe* (II). T, 4 to 5.15 p.m.; L after 7.30 p.m.; no R.—*Addington* (III). Distant T and L at night.—*Cambridge, Merton Villa* (III). Sharp TSS.—*Compton Bassett* (V). T, L, and R at 5 p.m.—*Pewsey* (V). T.—*Trowbridge, Holt* (V). TS, 5.15 to 6.30 p.m., with .64 in. of R.—*Babbacombe* (V). L.—*Partney* (VII). TS in morning.—*Hodsock Priory* (VII). TS, 9 a.m.—*Llanfrechfa Grange* (XI). L.

27th.—*St. Lawrence* (II). L at night.—*Cheadle, Oakamoor* (VI). An appalling and peculiarly local TS visited the Churnet Valley at Oakamoor, nothing like it having taken place for a number of years. Considerable consternation was exhibited by the villagers. 1.72 in. of R fell in an hour. At Cheadle, 3 miles distant, only a few

drops fell, and but little R comparatively fell in the other parts of the valley adjacent.

28th.—*Croydon, Addiscombe* (II). Highest temp. of month, $78^{\circ}1$.—*Compton Bassett* (V). T, L, and R at 4.30 p.m.—*Babbacombe* (V). L.—*Hodsock Priory* (VII). TS, 4 a.m.

29th.—*Pinner Hill* (I). Summer L, with T, after 10 p.m.—*Muswell Hill* (I). A good deal of sheet L between 8 and 10 p.m., with rather loud T.—*Enfield* (I). TS.—*Abinger Hall* (II). TS in night.—*Bromley Common* (II). T.—*St. Lawrence* (II). L in distance at night.—*Addington* (III). A very heavy TS at 11 p.m.—*Cambridge, Merton Villa* (III). TS, passed to S.W.—*Babbacombe* (V). L.—*Loughborough* (VII). L, T.—*Coston Rect.* (VII). Vivid L, with T, during the night.—*Strelley Hall* (VII). TS during night.—*Hodsock Priory* (VII). TS, 11 p.m.—*Achonachie Lodge [Beaully]* (XVIII). Highest shade temp. of year, $86^{\circ}5$.—*Castle Lough* (XX). T.—*Miltown Malbay* (XX). T.

30th.—*Beaminster* (V). TS, 5 to 7 p.m.—*Crewkerne, Bincombe Ho.* (V). A heavy TS; $\cdot 73$ in. of R fell in 45 minutes.—*Ashby Magna* (VII). At 1 a.m. a terrible storm burst over this place, moving from N.E.; the L was incessant, and the T quite awful; the rainfall in about two hours was $1\cdot 72$ in.

SEPTEMBER.

3rd.—*Hodsock Priory* (VII). Max. temp. in shade, $80^{\circ}7$.—*Chelford, Astle Hall* (VIII). Max. temp. of year, 84° .

4th.—*Croydon, Addiscombe* (II). Highest temp. of month and of year, $85^{\circ}1$, which is higher than any temp. previously (since 1872) recorded here in September.—*Bromley Common* (II). Max. temp. of year, 85° .—*St. Leonards* (II). Warmest day of the year; mean of max. and min. shade temperatures, $72^{\circ}1$.—*Addington* (III). Very hot.—*Trowbridge, Holt* (V). The highest shade temp. ($83^{\circ}0$) in the year.—*Coston Rectory* (VII). Very hot, the warmest day of the year; max. temp., $82^{\circ}8$.—*Strelley Hall* (VII). Max. in shade, $82^{\circ}6$, highest for the year.—*Hodsock Priory* (VII). Max. temp. of year, $84^{\circ}1$.—*Walton-on-the-Hill* (VIII). Max. in shade, $81^{\circ}0$; sheet L at night.—*Woodlands, Elterwater* (X). Very warm and sunny; R, T and L in night.—*Shap* (X). Dreadful T and L from 8 p.m. till 11 p.m.—*Llanfrechfa Grange* (XI). Very hot and sunny; the hottest day of the year.—*Melrose* (XII). Very fine L in evening.

6th.—*Croydon, Addiscombe* (II). With this day came to an end a

dry period lasting 28 days, during which no measurable R fell during the day time, and only insignificant amounts on three occasions at night.

6th to 15th.—*Jersey, St. Aubins* (XI). Unprecedentedly heavy rainfall, 5·17 in. in the six days.

7th.—*Babbacombe* (V). Solar halo.

10th.—*St. Leonards* (II). TS in far S.E.—*Melrose* (XII). T and L, p.m.—*Lochbroom* (XVIII). Very stormy.

11th.—*Hackney* (I). Rainfall, 1·68 in.—*Farnham, The Bourne Vic.* (II). Rainfall, 1·68 in., the greater part of which fell between 6.30 p.m. and midnight.—*Croydon, Addiscombe* (II). Light R at noon; steady R after 1·45 p.m.; and heavy R 6.30 to 8.30 p.m.; amount, ·69 in.; heavy R at night; amount, ·64 in.—*Beckenham, Foxgrove* (II). R in afternoon and night, 1·47 in.—*W. Brighton, Blatchington Road* (II). Very heavy R from 2 p.m. to midnight; 1·55 in.—*Horsham* (II). 1·69 in. of R fell; the heaviest fall in 24 hours since July, 1875.—*Diss* (IV). Sharp distant TS to S.—*Babbacombe* (V). L in night.

11th and 12th.—*Beckenham, Foxgrove* (II). Rainfall 1·82 in.—*Hurstleigh, Blackwater* (II). In the 24 hours, from 8.30 a.m. 11th to 8.30 a.m. 12th, 1·47 in. of R fell, and in the 48 hours ending 8.30 a.m. on the 13th, 2·19 in.—*Cambridge, Merton Villa* (III). TSS.

11th to 14th.—*Enfield* (I). In the four days 3·17 in. of R fell. Heavy T occurred on the 13th and 14th, and a great deal of L on the night of the 11th.

11th to 15th.—*Beulah Hill* (II). Rainfall in the five days, 3·90 in.—*Watford, Wansford Ho.* (III). 4·79 in. of R in the five days.—*Newport Pagnell* (III). A fall of R almost without precedent in this district; in the five days I registered 3·93 in.—*Coventry* (VI). 3·87 in. of R.—*Coventry, Stoke* (VI). Rainfall, 3·88 in. in the five days.—*Mansfield* (VII). In five days 3·90 in. of R fell, which is a far larger amount than fell in any other five days during the past 10 years.

11th to 16th.—*Crewkerne, Bincombe Ho.* (V). Very heavy storms, with T.

11th to 17th.—*Leicester, Belmont Villas* (VII). The rainfall for the 7 days ending Sept. 17th was 4·94 in.

11th to 18th.—*Bristol, Ashley Down* (VI). On Sept. 11th there commenced a series of heavy rains, continuing until the 18th, the aggregate for the 8 days being 3·42 in.; of this quantity 1·07 in. was measured on the 12th.

12th.—*W. Brighton, Blatchington Road* (II). Very heavy R in night ; .82 in.

12th to 16th.—*Chichester, Westgate* (II). 3.79 in. of R in 5 days, with a heavy TS, on the 12th.

12th to 18th.—*W. Brighton, Blatchington Road* (II). During the week 4.35 in. of R fell.

12th to 19th.—*Ashtead* (II). Rainfall recorded during the 8 days, 5.26 in.

13th.—*Abinger Hall* (II). TS at noon.—*Croydon, Addiscombe* (II). Sharp shower of R and H soon after noon ; distant T, midday.—*Compton Bassett* (V). Distant T and heavy R.—*Winsford* (V). Heavy S.E. gale, with much R.—*Strelley Hall* (VII). R in evening and night ; 1.42 in.

14th.—*Uxbridge, Harefield* (I). 3.20 in. of R fell in 6 or 7 hours.—*Croydon, Addiscombe* (II). Very heavy R, 10.30 a.m. to 2 p.m. ; showery, 4 to 6 p.m., followed by heavy R. TS, 7.30 p.m. ; amount .67 in. ; heavy R at night ; amount .50 in.—*Littlehampton* (II). Gale, with R.—*St. Leonards* (II). Gale from S.—*Babbacombe* (V). S.S.W. gale, with heavy R.—*Cheadle* (VI). TS.—*Cheadle, Tean Vic.* (VI). TS in the afternoon ; from 3 to 3.30 p.m. L very frequent and vivid, and T almost continuous ; R at intervals, and rapid fall of temp. Wind S.E. at beginning of storm, backed to E. and remained there. Another storm at 5 p.m., with heavier R.—*Kelstern Grange* (VII). Rainfall, 1.87 in.—*Strelley Hall* (VII). T and heavy R ; .50 in.—*Wold Newton Vic.* (IX). The greater part of the rainfall (2.95 in.) took place between 7.30 and 9.30 p.m. The R was most disastrous.—*Coldstream, Pawston* (X). The heaviest rainfall in 24 hours since observations were commenced in 1872 ; 2.57 in.—*Pentwyn* (XI). Severe T and H storm. The TS lasted about an hour and a quarter, and I measured .74 in. of R in that time (1.19 in. for the 24 hours). As far as I can gather, the H extended over quite a narrow strip, certainly not more than half-a-mile in width, and travelled in a course from the S.S.W. ; most of the hail was about the size of a pea, and opaque white ; but there were also many large pieces of clear ice, with sharp jagged edges ; they were of various shapes, many like the glass stoppers of decanters, larger at one end and coming to a point at the other, some like Maltese crosses. One was picked up and measured by a carpenter in the village, like an icicle, taper and 3 inches long. Another carpenter measured some $2\frac{1}{4}$ in. by $1\frac{1}{2}$ in. I myself did not see any more than $1\frac{1}{4}$ in. square. I had about 30 panes of glass

broken, and the hail lay white on the ground for at least an hour, although it was a warm day.—*Marchmont* (XIII). An excessive amount of R fell in 24 hours (2·24 in.).—*Watten* (XIX). Much L at night.—*Cahir, Tubrid* (XX). Gale.—*Killygarvan Glebe* (XXIII). Gale at night.

14th and 15th.—*Shap* (X). A great storm of wind and R, doing much damage to the crops.

15th.—*Hesleyside* (X). 1·65 in. of R fell.—*Melrose* (XII). Very stormy till midnight.—*Ballinasloe* (XXII). The temp. remained perfectly even, the ther. standing at 56° for the 24 hours, from 9 a.m. 15th to 9 a.m. 16th.—*Killygarvan Glebe* (XXIII). Gale all day.

15th and 16th.—*Farnham, Bourne Vic.* (II). Rainfall, 2·72 in.—*Walton-on-the-Hill*. (VIII). Stormy.

18th.—*St. Leonards* (II). Gale from S.W.; TS in evening.—*Addington* (III). Sharp TS, with R and H.—*Babbacombe* (V). S.W. gale.—*Cheadle* (VI). T and L.—*Coston Rect.* (VII). T and L in afternoon.—*Strelley Hall* (VII). TS from 10 to 10.20 a.m., during which time ·28 in. of R fell.—*Walton-on-the-Hill* (VIII). T and L.—*Shap* (X). Heavy H shower.

18th and 19th.—*Cambridge, Merton Villa* (III). TSS.

19th.—*Babbacombe* (V). Mock sun.—*Walton-on-the-Hill* (VIII). T and L.—*Woodlands, Elterwater* (X). L in night, with H and R.—*Shap* (X). 1 in. of S and H on ground.

20th.—*Croydon, Addiscombe* (II). Duration of sunshine, 9 hours 24 minutes.

OCTOBER.

2nd.—*Southampton, Woolston Lodge* (II). A violent squall of wind and sudden fall of temp.—*Achonachie Lodge [Beaulieu]* (XVIII). S, H and sleet.

3rd.—*Bromley Common* (II). First ice.—*Trowbridge, Holt* (V). Min. temp. in shade 30°·7; the first frost of the season.—*Strelley Hall* (VII). Min. in stand 31°·9, on grass 24°·2; first frost of the season.

4th.—*Torquay, Babbacombe* (V). R began at 5 a.m., continued without intermission till midnight, and from that time in showers till 8.50 a.m. on the 5th, by which time 2·44 in. had fallen. The heaviest R fell from 9 a.m. to 1 p.m. on the 4th, during which time 1·08 in. was measured. The wind was E.N.E. during the 4th, blowing a fresh gale from noon till 9 p.m., but shifted to S.W. at 2 a.m. on the 5th.—*Ashburton, Druid*

House (V). Heavy R all day, 1·83 in.—*Polapit Tamar* (V). In the 24 hours, from 9.30 a.m. on the 4th to 9.30 on 5th, 2·11 in. of R fell, causing all the rivers in this neighbourhood to overflow.—*Holsworthy, Court Barn* (V). 2·41 in. of R, with T at night.—*Zeal Monachorum* (V). Rainfall in 24 hours 2·31 in.—*Bodmin* (V). Rainfall 2·45 in., nearly 2 in. falling within 5 hours. Except in 1875, when on the 17th September 2·74 in. was registered, we have not had so heavy a fall for, I think, 22 years; I then registered 3·40 in., which fell within 2 hours.—*Ross, The Graig* (VI). Very wet, 2·10 in. of R.—*West Malvern* (VI). 1·59 in. of R fell.—*Strelley Hall* (VII). R all night; from 7 p.m. to 9 a.m. on the 5th 1·21 in. fell.—*Nantgwillt* (XI) About 5 in. of S on high ground.—*Dalnaspidal* (XVI). L.

4th and 5th.—*Taunton, Cothelstone House* (V). 3·40 in. of R in the two days.—*Partney* (VII). 2·39 in. of R fell in 24 hours.

4th to 6th.—*Peterborough, Springfield House* (III). 3·16 in. of R fell.—*Ross* (VI). Rainfall 3·17 in.

4th to 8th.—*Ketton Hall* (VII). 4·28 in. of R fell in the 4 days, causing great floods; on the 8th inst. ·94 in. of R fell in two hours, viz., from 9 to 11 a.m.

5th.—*St. Leonards* (II). Gale in early morning.—*Bideford, Littleham* (V). Heavy R; 1·95 in.—*Hereford, Fownhope Vic.* (VI). Rainfall 1·87 in.—*Thorpe Arnold* (VII). Much R, high flood.—*Scarborough* (IX). Strong E.N.E. gale, with heavy R, 1·59 in.—*Miltown Malbay* (XX). Heavy N.E. gale.

6th and 7th.—*Addington* (III). Great floods.

7th.—*Muswell Hill* (I). Distant T and vivid L in S.W. and W., between 11 p.m. and midnight.—*Enfield* (I). Heavy TS at night.—*Croydon, Addiscombe* (II). TS at night; amount of R ·25 in.—*St. Leonards* (II). L at night.—*Compton Bassett* (V). T and L at 6 p.m.—*Babbacombe* (V). TS.—*Ashburton, Druid Ho.* (V). L at 7 p.m.

7th to 12th.—*Canterbury, Bridge Street* (II). R collected between the 7th and 12th amounted to 5·04 in. The valley above and below the city was rapidly flooded, and continued more or less so through November, an unusually early and prolonged occurrence.

8th.—*Abinger Hall* (II). T and R.—*St. Leonards* (II). TS in early morning.—*Addington* (III). T and heavy R.—*Babbacombe* (V). TS.—*Thorpe Arnold* (VII). Heavy R; flood.

9th.—*Abinger Hall* (II). A very stormy day.—*Croydon, Thornton Heath* (II). Rainfall 1·68 in.—*Croydon, Addiscombe* (II). Very heavy R all day, from 8.30 a.m., amount ·98 in., and again at night,

amount 1·20 in. The amount deposited during the 24 hours was 2·18 in., which is by far the heaviest fall in one day that there has been in Croydon for at least 20 years.—*Tenterden* (II). One of the largest rainfalls I have ever recorded, 1·71 in. There was not much R before 1 p.m., and it was over before 4 a.m. on 10th, but all the afternoon and evening it poured down in torrents.—*Sevenoaks, River Hill* (II). Rainfall 2·30 in., the heaviest recorded in 24 hours during the last 25 years, though that during the 10th and 11th of April, 1878, was collectively greater.—*Bromley Common* (II). Very wet boisterous day, 2·30 in. of R.—*Arundel, Dale Park* (II). 2·04 in. of R fell.—*Horsham* (II). 1·82 in. of R fell, the heaviest fall in 24 hours since July 12th and 13th, 1868.—*Brighton, Blatchington Road* (II). R all day from E., 1·49 in.; many parts of the county flooded.—*Lewes, Iford* (II). 2·15 in. of R fell within 24 hours, although taking it at 9 a.m. divided it.—*Buxted Park* (II). 1·80 in. R fell, the greatest amount ever registered here in 24 hours.—*Crowborough Beacon Obs.* (II). R commenced falling about 6 a.m., and by 9 a.m. 1·40 in. had fallen; between 9 a.m. and midnight 2·67 in. more fell, making 3·07 in. in 18 hours.—*Balcombe Place* (II). The heaviest fall of R I ever registered in 24 hours, viz., 2·56 in.; the floods were tremendous, and did much damage.

10th.—*East Grinstead* (II). 2·60 in. of R fell between 1 p.m. on the 9th and 1 a.m. on the 10th; 2·21 in. had previously fallen since the 4th inst.

9th and 10th.—*Ashdown Cottage* (II). Floods. *Maldon, Norton Hall* (IV). 3·25 in. of R fell in 26 hours, and following 1·53 in. which fell in the previous 3 or 4 days, caused heavy floods.

14th.—*Stanley Vic.*, (IX). The main body of swallows left, a fortnight later than usual.

15th.—*St. Leonards* (II). Lunar halo.

18th.—*Elchies* (XVII). 5 in. of S fell, and lay for a week.—*Keith* (XVII.) 4 in. of S on ground.

18th to 21st.—*Watten* (XIX). S, the earliest considerable snow-storm for many years.

19th.—*London, Springfield Road* (I). Heavy fall of S in night.—*Croydon, Addiscombe* (II). R at night, followed by sleet, till about 3 a.m., then S, amount, 1·67 in.—*Arundel, Dale Park* (II). S and R, amounting to 1·12 in.—*Stonor Park* (III). S at night.—*Gittisham* (V). Snowstorm, unusually early.—*Exeter Inst.* (V). Hills in the district covered with S.—*Seaborough* (V). S unprecedented in the memory of

this generation.—*Worksop, Hodsock Priory* (VII). Solar halo 1 to 2 p.m.—*Douglas* (XI). Hills covered with S.—*Knockan* (XXIII). S on mountains.

19th and 20th.—*Abinger Hall* (II). Heavy fall of S, doing great damage to oaks and elms.—*Sevenoaks, Riverhead Vic.* (II). S.—*Hailsham* (II). S.—*Ashdown Cot.* (II). Snowstorm ; damage to oak trees.—*Skye, Broadford* (XVIII). S.

20th.—*Pinner Hill* (I). S.—*Muswell Hill* (I). S 3 in. deep where it had not melted, causing extraordinary damage to trees, especially oaks.—*Enfield* (I). Very heavy S, doing considerable damage to trees.—*Reigate, Nutwood* (II). S fell, yielding .45 in. of water.—*Croydon, Addiscombe* (II). S continued falling thickly in small flakes, until 1 p.m., after which time, until it ceased snowing altogether at 3 p.m., the fall was but light. Depth on gravel path, 1 in. ; on lawn, 3 in. Assuming the flakes to have fallen throughout at the same rate as between 9 a.m. and 1 p.m., they would have yielded, when melted, .45 in. of snow-water, representing a depth of at least $5\frac{1}{2}$ in. of S upon the ground. Very few of the large oak and elm trees in this neighbourhood escaped without the loss of one or more of their branches, many of these being over 30 ft. in length. Dahlias killed by the night-frost ; more than three weeks earlier than in 1879.—*Weybridge, Oaklands* (II). The oak trees here were very seriously damaged by the weight of the S which fell. The day was calm, the oaks were still in full leaf, and bearing a very heavy crop of acorns. The melted S yielded 7-10ths of an inch. Deodars and Scotch firs were uninjured.—*Tenterden, Summer Hill* (II). S fell, but melted as it fell, so did no damage to trees.—*Sevenoaks, Riverhill* (II). About a foot of S fell [registered as 0.92 in.] which did much damage to forest trees, especially oaks.—*Littlehampton* (II). S all day, rough wind.—*Horsham, Compton Lea* (II). S, yielding .75 in.—*W. Brighton, Blatchington-road* (II). Heavy S in morning ; South Downs white for several days.—*St. Leonards* (II). S and R ; lunar halo.—*Lewes, Iford* (II). Heavy S, R, and sleet.—*Warbleton Rect.* (II). A heavy fall of S from dawn to 2 p.m., about 6 in. Oak branches broken by weight of S added to leaves and acorns.—*Dogmersfield Park* (II). Considerable fall of S, doing much damage to timber trees.—*Addington* (III). Ground white with S.—*Diss* (IV). S on ground.—*Trowbridge, Holt* (V). The first S of the season.—*Compton Bassett* (V). Slight fall of S, sharp frost at night.—*Langton Herring* (V). S on hills.—*Beaminster* (V). Three or four inches of S.—*Minterne Rectory* (V). Heavy S,

·75 in.—*Coston Rectory* (VII). A little S in afternoon, heavy fall at night.—*Lincoln, Boultham* (VII). First fall of S.—*Strelley Hall* (VII). E, and flakes of S.—*Hodsock Priory* (VII). Slight S.—*Stanley Vic.* (IX.) Snowstorm in afternoon.—*Rhug* (XI). S and frost.—*Dalnaspidal* (XVI). Ice on north end of Loch Garry.—*Budgate, Cuvdor* (XVII). S.

21st.—*Exeter Institution* (V). S 5 in. deep in city.—*Sansaw Hall* (VI). Ground covered with S.—*Thorpe Arnold* (VII). First fall of S.—*Strelley Hall* (VII). Min. in stand, 24·2; on grass, 20·2.—*Castle Lough* (XX). Temp. fell to 26°.—*Miltown Malbay* (XX). Ice half an inch thick.

24th.—*Croydon, Addiscombe* (II). Lowest temp. of month, 29°·3.

25th.—*Arundel, Dale Park* (II). 1·85 in. of R fell.—*Miltown Malbay* (XX). Heavy E. gale.—*Dowra* (XXIII). First S on mountains.

26th.—*Staunton-on-Wye* (VI). 2·15 in. of R fell.—*Douglas* (XI). E.N.E. gale, with 1·03 in. of R.—*Castle Lough* (XX). Gale, with 1·10 in. of R.

26th and 27th.—*Abinger Hall* (II). Heavy R and floods.—*Finlern* (VII). In the two days 2·45 in. of R fell.—*Welshpool, Buttington* (XI). R fell continuously for about 40 to 45 hours, amounting to 3·38 in., and causing higher floods in the Severn than have occurred for many years.—*Colwyn Bay, Nant-y-Glyn* (XI). R began to fall on the morning of the 26th, and continued till 11 a.m. on 27th, when it changed to S, which lasted till 5.30 p.m.; then R fell again, which brought the S off the roofs and trees in masses, and did much damage.—*Balrath* (XXI). Unprecedented rainfall, 1·60 in. on the first day, and 2·00 in. on the second.—*Kilconnell* (XXII). Storm, but not remarkably severe.

26th to 28th.—*Burford House* (VI). Fall of R, 2·60 in.; river Teme flooded.—*Longraigue* (XXI). Between sunrise on 26th and midnight on 27th, 3·63 in. of R fell.—*Williamstown* (XXI). Severe storm and floods, inundating the villages of Clonee and Dunboyne, and laying lands, previously free, under water.

27th.—*London, Springfield Road* (I). Heavy S. gale in night.—*Abinger Hall* (II). Very stormy.—*Littlehampton* (II). S.W. gale.—*St. Leonards* (II). Gale at night from S.—*Diss* (IV). Heavy gale in night.—*Alderbury* (V). Great storm after 9 p.m.—*Compton Bassett* (V). Strong gale at night, with R.—*Beaminster* (V). Very stormy night.—*Strelley Hall* (VII). R all day and night; 1·49 in.—*Stanley Vic.* (IX). R and S all day; 1·80 in.—*Scarborough* (IX). Heavy E.N.E. gale, with 1·84 in. of R.—*Richmond* (IX). Rainfall, 2·70 in., the heaviest fall in 24 hours since observations were commenced.—*Llan-*

frechfa Grange (XI). Gale and L at night.—*Carno* (XI). Heavy R, 2·22 in.—*Rhug* (XI). Heavy R and S; 1·66 in.—*Port Madoc* (XI). Strong gale; 3·06 in. of R.—*Bodorgan* (XI). Furious E. gale, with heavy R; 3·00 in.—*Douglas* (XI). Whole gale, N.E., with continuous R; 2·00 in.—*Castle Lough* (XX). S on hills.—*Miltown Malbay* (XX). Fierce S storm.—*Ballyhyland* (XXI). The largest amount of rainfall ever recorded here; 2·43 in.—*Ballinasloe* (XXII). High wind.—*Killygarvan Glebe* (XXIII). Gale at night.

27th and 28th.—*Babbacombe* (V). Heavy S.S.W. gale.—*Walton-on-the-Hill* (VIII). Strong gale, with R and S.—*Middlesborough* (IX). A dreadful storm of wind and R, from the S.S.E. to N.E.; great tide and damage at the mouth of the Tees.—*Wolsingham* (X). 3·21 in. of R fell within 36 hours; R mixed with S.—*Shap* (X). Tremendous gale, with S.

27th to 29th.—*Melrose, Abbey Gate* (XII). Severe storm of wind and sleet.

28th.—*Benenden* (II). TS.—*St. Leonards* (II). Strong gale from S.S.W. to S.W.—*Lewes, Iford* (II). Heavy gale.—*St. Lawrence* (II). Gale, with L and T, at 5 a.m.—*Rendlesham Hall* (V). Gale.—*Coston Rect.* (VII). High gale at night.—*Thorpe Arnold* (VII). Great flood.—*Partney* (VII). Gale very strong at times.—*Whorlton* (X). Strong gale.—*Hesleyside* (X). 1·55 in. of R fell.—*Kemback* (XVI). Gale.—*Killygarvan Glebe* (XXIII). Gale all day.

28th and 29th.—*Cambridge, Merton Villa* (III). Gales.

30th.—*Abinger Hall* (II). Severe frost.

31st.—*Croydon, Addiscombe* (II). Duration of sunshine, 7 hours 24 minutes.

NOVEMBER.

1st.—*Croydon, Addiscombe* (II). Many deciduous trees still retained nearly the whole of their foliage.

2nd.—*Croydon, Addiscombe* (II). Lowest temp. of month 23°·6, and on grass 17°·2.—*Strelley Hall* (VII). Min. in stand 23°·8, on grass 16°·4.

3rd.—*Enfield* (I). Bright aurora.—*Croydon, Addiscombe* (II). Duration of sunshine 6 hr. 36 min.—*Babbacombe* (V). Aurora.—*Cheadle* (VI). Aurora very brilliant.—*More Rec.* (VI). Very fine aurora.—*Scarborough* (IX). Fine aurora.—*Melrose, Abbey Gate* (XII). Aurora.—*Dalnaspidal* (XVI). Aurora.—*Miltown Malbay* (XX). Splendid aurora.

9th.—*Coston Rec.* (VII). High gale at night.—*Shap* (X). Heavy gale.—*Killygarvan Glebe* (XXIII). Gale, with R.

12th.—*Elterwater, Woodlands* (X). Storm of wind and R, 2·63 in. *Carno, Tybrittle* (XI). Very stormy.—*Miltown Malbay* (XX). Heavy W. gale.—*Kilconnell Rec.* (XXII). Storm from S.W.

13th.—*Cambridge, Merton Villa* (III). S.W. gale.—*Rendlesham* (IV). Strong wind from W.S.W., increasing to gale at night.—*Langtree Wick* (V). S.W. gale.—*Strelley Hall* (VII). Max. in stand 58°·8.—*Elterwater, Woodlands* (X). Tremendous storm of wind and R, 3·28 in.—*Miltown Malbay* (XX). Heavy S.W. gale.

13th and 14th.—*Ramelton* (XXIII). Floods.

13th to 16th.—*St. Leonards* (II). S.W. gales.

14th.—*Strelley Hall* (VII) R began early in the morning, lasting till 11 a.m.; began again 2 p.m., and lasted into the night; amount 1·05 in.

15th.—*Littlehampton* (II). Gale of wind and R.—*Ashburton, Druid Ho.* (V). R all day and night, T at 11 a.m.—*Shap* (X). Heavy fall of S at night.

16th.—*St. Lawrence* (II). Gale from S.W.—*Cambridge, Merton Villa* (III). Hard S.W. gale.—*Diss* (IV). Heavy gale from S.—*Babbacombe* (V). Heavy S.W. gale.—*Cheltenham* (VI). Very stormy.

17th.—*Castle Malgwyn* (XI). Heavy S and H.

18th.—*Croydon, Addiscombe* (II). Heavy fall of sleet, 1.15 to 4 p.m. followed by R; heavy R at night. Cut the last rose of the year, about the same date as in 1879, but nearly three weeks earlier than in 1878.—*Tenterden* (II). Heavy fall of R and S, 1·43 in.—*Littlehampton* (II). Gale with R and S, 1·45 in.—*W. Brighton, Blatchington Road* (II). E. gale with R from 10 a.m. till 5 a.m. 19th, a period of 19 hours; rainfall 1·52 in.—*St. Leonards* (II). Gale from E., 2·19 in. of R.—*Winchelsea, The Friars* (II). 2·14 in. of R fell.—*St. Lawrence* (II). 2·72 in. of R, the largest amount recorded in one day since October, 1865.—*Cambridge, Merton Villa* (III). Hard N.N.E. gale.—*Trowbridge Holt* (V). Heavy snowfall in the morning, 3 in. deep at 9 a.m.—*Compton Bassett* (V). Snowstorm at 3 p.m.—*Babbacombe* (V). Heavy N.E. gale.—*Strelley Hall* (VII). S from 6 to 11 a.m.—*Hodsock Priory* (VII). S on ground.

20th.—*Croydon, Addiscombe* (II). Short shower of S, 10.50 a.m.—*St. Leonards* (II). S, R, and H. *Achonachie Lodge [Beaully]* (XVIII). Shade temp. fell to 7°.

21st.—*Croydon, Addiscombe* (II). Dense fog, houses quite invisible

at a distance of 30 yards at noon.—*Diss* (IV). Sharp frost all day, ice an inch thick.—*Hodsock Priory* (VII). Min. temp. 19°·8.—*New Barnsley* (XXIII). Ice 1 in. thick.

22nd.—*Croydon, Addiscombe* (II). Lowest temp. on grass, 17°·2.—*Dalnaspidal* (XVI). Aurora.

23rd.—*Strelley Hall* (VII). § 10.0 to 10.30 a.m.—*Miltown Malbay* (XX). Heavy S.W. gale.

24th.—*London, Springfield Road* (I). Strong S.W. gale at night.—*Ashburton, Druid House* (V). Heavy storm all night.—*Melrose, Abbey Gate* (XII). Tweed in high flood.—*Tipperary, Henry Street* (XX). Storm.

24th and 25th.—*Shap* (X). Very great floods.

24th to 26th.—*St. Leonards* (II). S.W. gales.

25th.—*Croydon, Addiscombe* (II). TS 2.55 to 3.10 p.m., amount ·08 in. Highest velocity of wind in any one hour during the month, 27 miles; direction, S.S.W.—*Addington* (III). Stormy, T at noon. *Babbacombe* (V). Heavy S.W. gale.—*Dalnaspidal* (XVI). Gale.—*Miltown Malbay* (XX). Gale from S.W. commenced blowing about 11 p.m., increasing in force until 6 a.m. on 26th, when the wind veered to W., and gradually abated; for force and extent of damage it has had no equal since 1847.—*Dowra* (XXIII). Strong gale at night.—*Kilconnell Rectory* (XXIII). Violent storm from S.W.—*Buncrana* (XXIII). Very violent storm from S.W., veering to W. and N.W.

25th and 26th.—*Knockan* (XXIII). Strong gale.

26th.—*Cambridge, Merton Villa* (III). S.W. gale, L in evening.—*Babbacombe* (V). Solar halo with parhelion.—*Stanley Vic.* (IX). L without T.—*Whorlton* (X). TS, L very vivid.—*Elterwater, Woodlands* (X). T and L in afternoon.—*Dalnaspidal* (XVI). Gale with T.—*Glenfinnan* (XVIII). Gale approaching the force of a hurricane.—*Achonachie Lodge [Beauly]* (XVIII). Great gale from S.W., nearly as heavy as the Tay Bridge storm.—*Watten* (XIX). Great gale from S.S.W.—*Tipperary, Henry Street* (XX). Storm.—*Newtownards* (XXIII). Severe gale.—*Killygarvan Glebe* (XXIII). Violent S.W. gale.

27th and 28th.—*Whitchurch* (VI). 3·30 in. of R fell in the two consecutive days.

28th.—*Melrose, Abbey Gate* (XII). S.W. gale.—*Culloden* (XVIII). Slight shock of earthquake at 6 p.m.—*Ramelton* (XXIII). Slight earthquake at 5.25 p.m.; wave of disturbance from W. to E.—*Killygarvan Glebe* (XXIII). Shock of earthquake about 5.10 p.m.—*Carndonagh* (XXIII). A shock of earthquake felt at 5 p.m.

DECEMBER.

2nd.—*Babbacombe* (V). Solar halo and parhelia.

6th.—*Strelley Hall* (VII). Max. in stand, $54^{\circ}8$; in sun, $82^{\circ}7$.

7th.—*Croydon, Addiscombe* (II). Highest observed reading of bar., 30·667 in., at midnight.—*Warbleton Rect.* (II). A butterfly in garden.

9th.—*Croydon, Addiscombe* (II). Christmas rose (*helleborus niger maximus*) in north border, first in flower ; three weeks later than in 1879.—*St. Lawrence* (II). Magnificent sunset.—*Newport, I. of W.* (II). Splendid sunset.—*Addington* (III). Most magnificent sunset.—*Cheadle, The Heath House* (VI). Remarkable red sky at sunset.—*Killygarvan Glebe* (XXIII). Gale at night.

10th.—*Strelley Hall* (VII). T at 2.30 p.m.—*Whorlton* (X). Strong gale.—*Dalnaspidal* (XVI). Strong gale.

12th.—*Shap* (X). Slight shock of earthquake about 5·25 p.m.—*Killygarvan Glebe* (XXIII). Strong gale at night, with heavy R.

13th.—*Stanley Vic.* (IX). Thrush singing.

15th.—*Arthurstone* (XVI). Great gale, and 6 in. of S.

18th.—*St. Leonards* (II). S.S.W. gale ; L between 7 and 8 p.m.—*Babbacombe* (V). W.S.W. gale ; L.—*Budgate Cawdor* (XVII). Very stormy.—*Forsinard* (XIX). High wind and S drifting.—*New Barnsley* (XXIII). Gale at night.—*Buncrana* (XXIII). Violent gale, with H and sleet.

18th and 19th.—*Miltown Malbay* (XX). Storm, N.W., with H, S and R.

19th.—*Druid, Ashburton* (V). T, L, and heavy R ; 1·18 in.—*Whorlton* (X). Gale.

20th.—*Croydon, Addiscombe* (II). Heavy R till 10.30 a.m., then lighter ; S 1.45 to 4 p.m. ; amount, ·45 in.—*Strelley Hall* (VII). S, 7 to 8.45 a.m. ; total depth, $2\frac{1}{4}$ in., and again in night, 1 in. more.

22nd.—*Croydon, Addiscombe* (II). Lowest temp. of month, $27^{\circ}6$, lowest on grass $18^{\circ}3$.—*Diss* (IV). Heavy gale at night from S.W.—*Strelley Hall* (VII). Max. in shade rose to $50^{\circ}3$ between 4 p.m. on the 22nd and 9 a.m. on the 23rd ; during the day the max. was under 40° .—*Ellerwater, Woodlands* (X). Heavy fall of S and R, 2·27 in.—*Nantgwillt* (XI). Heavy R (1·23 in.), and the heaviest flood remembered : nine road and foot bridges carried away within 5 miles.—*Carno* (XI). Heavy R and high flood.

23rd.—*Babbacombe* (V). L.

24th.—*Babbacombe* (V). L.

25th.—*Croydon, Addiscombe* (II). Duration of sunshine 5 hr. 36 min.

26th.—*Loughborough* (VII). 3 in. of S.—*Strelley Hall* (VII). S during the night, $3\frac{1}{2}$ in.

27th.—*Worksope, Hodsock Priory* (VII). S 2 in. deep.—*Achonachie Lodge [Beauley]* (XVIII). Min. temp. of year 6° .

28th.—*Ross, The Graig* (VI). High flood on Wye.

28th and 29th.—*Castle Malgwyn* (XI). Very heavy rains and great floods.

29th.—*St. Leonards* (II). Fresh gale at night from S.S.W.—*Cambridge* (III). Gale from S. at night.—*Babbacombe* (V). S.S.W. gale.—*Walton-on-the-Hill* (VIII). Stormy.—*Stanley Vic.* (IX). Highest flood since 1866.—*Durham, Ushaw* (X). V very severe snowstorm, the yield of S here was .72 in. in the night, but further W. there was a greater average depth of S than here.—*Higham* (X). 11 in. of S, preceded by R and sleet.

30th.—*Croydon, Addiscombe* (II). S at night.

31st.—*Croydon, Addiscombe* (II). S $1\frac{1}{2}$ in. deep at 9 a.m.; wall-flowers and pansies still in flower.

OBSERVERS' NOTES ON THE MONTHS.

JANUARY.

I. *Muswell Hill*. Rainfall only one-eighth of the average of the past eight years, and the smallest amount in any month during that period.—*Enfield*. The month was, on the whole, remarkably fine, with scarcely any wind.

II. *Abinger Hall*. On the whole dull, foggy, dry, and very cold.—*Croydon, Tanfield Lodge*. The driest January since observations were commenced in 1860 ; rainfall only .38 in., 2.34 in. below the average.—*Croydon, Addiscombe*. Exceedingly cold, most exceptionally dry, and extremely bright, with a rather dry and singularly calm atmosphere. It was remarkable as being the fifteenth unseasonably cold, and the fourth very dry month in succession, for a severe frost at its close, which, being unaccompanied by S, penetrated the ground to a very unusual depth, and for the high atmospheric pressures so frequently indicated by the bar.—*Tenterden*. The driest month since July, 1869 ; frost on 22 nights.—*Hythe*. A very dry, wintry month.—*Bromley Common*. A comparatively calm month, remarkable for its extreme dryness, the extraordinary height of the bar., and the dense fogs.—*Brighton, Blatchington Road*. Very dry, only .63 in. of R.—*St. Leonards*. The month commenced with mild, squally, and wet weather, with W. winds. After the first week the weather was cold till the 30th, with wind between N.W. and E. The last two days were like advanced spring, the sun max. registering 84°·8 on the 31st.—*St. Lawrence*. A remarkably dry month, making the fourth month of drought ; the rainfall during the four months was only 3.26 in., the average being 14.81 in. Mean temp. of month 36°·9.—*Southampton, Cadland*. Lowest fall on record for the month.—*Southampton, Woolston Lodge*. Very cold and dry. Max. temp. 52°·3, min. 15°·4. 22 nights below 33°, and 5 below 20°.

III. *Buntingford, Throcking Rectory*. Very dry cold month, with frequent fogs at the beginning. Max. 52°·4, min. 49°·4 ; on grass

46°·6. Ther. on 28th registered 14°·5.—*Datchworth*. Cold almost throughout. The frost was not unusually intense, but there being very little S, it penetrated deeper into the ground, and did much damage. Rainfall extraordinarily small.—*Addington*. The temp. at the beginning and end of the month was high, but from the 6th to the 30th it was very low, the max. temp. only twice reaching 38°, and being as low as 27° on the 28th. Very dry, with dense fogs.—*Stonor Park*. The first half of the month was foggy and cold; the latter half bright, with severe frosts.—*Northampton*. The driest January for many years; rainfall 1·89 in. below the average.—*Cambridge*. A very cold month; scarcely any R or S. High bar. and no wind after the 1st. Mean temp. 33°; severe frost prevailed from the 18th to 30th.

IV. *Sheering*. Latter part of month very foggy.—*Ipswich*, *Bishop's Hill*. Another unusually dry month; much frost and fog; very little wind.—*Diss*. A month of beautiful winter weather; warm in the first week, but afterwards cold and dry, with much brilliant sun. A few days foggy. Farmers have been unable to get on their land, but Jack Frost has been very busy on it, and has done as much good, probably, as they could have done. The rainfall (0·14 in. on 4 days) is the smallest I have ever registered in a month. Influenza and bronchitis very prevalent.—*Geldeston*. January, 0·17 in. of R, the lowest fall yet recorded in any month.

V. *Trowbridge*, *Holt*. A very cold month; freezing on 22 nights in screen, on 26 on grass, and on 6 days throughout the 24 hours. Min. temp. 12°·6 in screen, and 6°·0 on grass on 21st, the coldest night of the year. 3 in. of S on 13th.—*Compton Bassett*. The first 5 days were clear and fine, and the last two bright and sunny, but during the rest of the month severe frosts and dense fogs prevailed.—*Babacombe*. A dry cold month; mean temp. 37°·0, the fifteenth consecutive cold month, and the fourth dry month.

VI. *Newnham-on-Severn*. Dry, with alternate periods of mild and cold weather. A prevalence of E. wind.—*Cheltenham*. A remarkably fine, dry, calm month. Temp. high during the early part and again on the last two days.—*Ross*. A very cold month, with high bar., frost almost continuous from the 15th. River Wye frozen to bear all across above Hereford Bridge. Mean temp. 33°·9.

VII. *Loughborough*. A very dry month, only 4 days with R or S. Total fall 0·29 in.; lowest temp. in the shade of the year on the 29th, 15°·5, 12°·1 on grass. Bar. generally high throughout the month.—

Coston. A bright dry month, with high bar.; much sunshine, and very small rainfall.—*Partney*. Month remarkable for the small amount of R, prevalence of mist and fog, and low temp.—*Bucknall*. The ice on the Witham at the end of the month bore almost from Lincoln to Boston. Rainfall (0·24 in.) remarkably small.—*Strelley Hall*. A very dry month, only 0·27 in of R, 0·11 in. of which fell on one day. Five rainy days. Frost from 8th to end of month.—*Worksop, Hodsock Priory*. Rainfall less than half that of any other month since observations were commenced in April, 1875. Frost during latter half of month; mean temp. rather low.

VIII. *Walton-on-the-Hill*. An extremely dry month.

IX. *Stanley Vicarage*. Most favourable weather for farming up to the 15th; afterwards frosty. Very dry all the month.—*Scarborough*. Remarkably high bar., and small rainfall.—*Forett Park*. A dry month, but foggy.

X. *Coldstream, Pawston*. Unusually dry.—*Woodlands, Elterwater*. An extremely dry month, and upon the whole very fine.—*Shap*. A dark cold month, with much fog.

XI. *Llanfrechfa Grange*. A remarkably dry and still month.—*Castle Malgwyn*. A very fine month, the river Tivey being as low as in summer.—*Menaifron*. Rainfall smallest of any month in the year; 25 days dry; high bar. readings throughout. W.S.W. gale on 2nd; frost on 14 days,

XII. *Crichton Inst.* Rainfall almost unprecedentedly small. There were periods of mildness and humidity at the beginning and end of the month, but frost continued for 20 days between. Mean temp. much below the average. Bar. high; little sun and frequent mists.—*Melrose*. Mean temp. 31°·0, much below the average; rainfall only about a third of the average. Wind moderate (except at beginning and end of month), mostly W.

XV. *Rothsay, Barone Cottage*. Remarkably mild.

XVI. *Kemback*. Open weather for first 11 days, with light S.W. winds. 12th to 17th, wind variable; 18th, moderate gale, followed by fine cold weather, with S. winds till 25th. Min. temp. steadily rising from 20°·0 on 19th, to 42°·0 on 31st. Very little variation in the max.; season exceptionally favourable for agriculture.

XVIII. *Lochbroom*. From the 4th to the end the weather was remarkably fine, more like summer than winter.—*Glenfinnan*. First few days very wet and mild, succeeded by beautiful bright winter weather, without wind; end of month heavy rains, high winds, and high temp.

XIX. *Watten*. Exceptionally fine weather, though variable.

XX. *Glenville*. A very fine dry month, but cold.—*Tipperary*. A very fine month, with severe frost.—*Castle Lough*. The early part of the month was mild, but on the 18th frost set in, and lasted till the 24th.—*Kilrush*. Exceptionally dry and fine, but very cold.—*Miltown Malbay*. The first week was stormy, the remainder dry, with rather severe frosts during the third week.

XXII. *Enniscoe*. There were 20 days during the month on which the temp. fell below 32°0.

XXIII. *New Barnsley*. A fine open month ; severe frost from 19th to 24th.—*Stewartstown*. Rainfall much below the average.—*Killygarvan Glebe*. Rainfall and temp. below the average ; there were gales on two days, and hard frosts on five ; remainder of the month fine. *Buncrana*. Some cold weather, but on the whole a fine winter month.

FEBRUARY.

II. *Abinger Hall*. Rather wet, but on the whole genial, and at times warm and bright.—*Croydon, Addiscombe*. A mild, wet, and unusually bright month, with an exceptionally humid and very windy atmosphere. It was remarkable as being the first unseasonably warm month since October, 1878, or for sixteen months, and the first wet one since the previous September, or for five months, also for the entire absence of S.—*Hythe*. A wet month, with very little frost.—*Bromley Common*. Rather a showery month, but much milder than usual.—*Littlehampton*. Rough, cold, and wet.—*St. Leonards*. A squally and unsettled month ; gales on 7 days. No S ; sunshine at times remarkably strong, the black bulb in vacuo registering 103°·7 on the 17th.—*Southampton, Cadland*. Heaviest fall during February since 1861.—*Southampton, Woolston Lodge*. Very wet from 7th to 22nd. Max. temp. 54°·6, min. 24°·8 ; 9 nights below 32°0.

III. *Datchworth*. Cold on the whole, but changeable ; frequent R, and total rather large.—*Buntingford, Throcking Rectory*. A wet month, after the 4th seldom a day without rain. T heard on 8th ; much fog early in the month.—*Addington*. A wet month, with large floods about the middle ; frequent high winds ; vegetation very backward.—*Stonor Park*. Very foggy and wretched till the 8th, from thence to 14th cloudy, with showers and slight frosts, followed by some wet days, with strong W. and S.W. winds, the latter part of the month

was very fine and favourable for farm and garden.—*Cambridge, Merton Villa*. A month of rather frequent R. No severe frost.

IV. *Rendlesham Hall*. A very windy month; strong gales from 14th to 20th, and again in latter part of month.—*Diss*. The month commenced with a fortnight of pleasant weather, but the latter half was squally. No great frosts. Weather altogether favourable for farming.

V. *Trowbridge, Holt*. The most boisterous month of the year. A very heavy south-westerly gale on the 15th and 16th; 3·36 in. of R fell between the 5th and 22nd.—*Compton Bassett*. Wet and cold, with frequent night frosts, and boisterous S.W. winds. No S.—*Langton Herring*. Very wet up to the 22nd; mean temp. $41^{\circ}9$, $1^{\circ}3$ above the average of eight years.—*Babbacombe*. A mild, wet, stormy month, with great variations of pressure. Mean temp. $44^{\circ}2$; the first monthly temp. above the average since October, 1878.—*Crewkerne, Bincombe House*. Very stormy month, with high gales and low bar. readings.—*Taunton*. Largest total rainfall of any February for the last 25 years.

VI. *Neurham-on-Severn*. Much wind, and R on 20 days.—*Cheltenham*. An unsettled month; atmospheric pressure very inconstant.—*Ross*. The wettest February since 1833, the total rainfall being nearly three times the average; little frost.

VII. *Loughborough*. A wet month; 19 rainy days; total fall 2·28 in.—*Coston Rectory*. A very rough month, with occasional gleams of sunshine. Winds very high; temp. above the mean.—*Partney*. Mist and fog very prevalent.—*Strelley Hall*. Foggy from the 1st to the 7th. Frost from 11th to 14th. R fell every day from 14th to 22nd.—*Worksop, Hodsock Priory*. Rainfall about the mean; a good many rainy days, but only one large fall; temp. about the mean.

VIII. *Walton-on-the-Hill*. An unsettled month throughout.

IX. *Scarborough*. Rainfall about the average. Mean temp. $42^{\circ}3$, $2^{\circ}4$ above the average; strong winds frequent, but no S.

X. *Whorlton*. Much R, with occasional high winds.—*Shap*. A very wet, and very stormy month.

XI. *Llanfrechfa*. Very mild after the first two days but foggy.—*Castle Malgwyn*. A damp month throughout.—*Menaifron*. Only 4 days on which R was not measured, but total below the average. Frost on 4 days; T on afternoon of 6th.—*Douglas*. A mild wet month; vegetation forward; strong N.W. and S.W. gales during the last 10 days.

XII. *Crichton Inst.* Rather a wet month ; mean temp. $40^{\circ}\cdot9$ higher than usual ; several severe gales from S.W. and S.E.—*Melrose*. Mean temp. $38^{\circ}\cdot5$, 4° above the average ; rainfall $\cdot89$ in. above the average.

XV. *Rothsay, Barone Cottage*. Remarkably mild.

XVI. *Kemback*. The whole month was remarkably favourable for agriculture in this locality. Westerly winds prevailed during a great part of the month.

XVII. *Keith* (H.R.S.) Very mild.

XVIII. *Lochbroom*. Till the 25th the weather was beautifully fine and warm, but the last 5 days were very stormy and ungenial.—*Glenfinnan*. Greater part of month mild and calm, and, although wet, the R fell mostly at night ; after the 23rd the weather was colder and exceptionally boisterous.

XIX. *Watten* (H.R.S.) First half mild and fine, latter half colder, with storms of wind, with R or sleet.

XX. *Castle Lough*. Very little frost during the month, and temp. generally high.—*Kilcornan*. The beginning of the month was very mild and open, but the latter part was cold, stormy and wet.—*Kilrush*. Very wet, stormy, changeable and cold ; very unhealthy.—*Miltown Malbay*. A very inclement month, only 4 days without R.

XXIII. *Newtownards*. Weather stormy and showery during the month ; very little frost.—*New Barnsley*. The R fell mostly at night, and there was very little frost. Very stormy at the end of the month.—*Bushmills*. Very mild.—*Stewartstown*. Rainfall rather below the average.—*Killygarvan*. A changeable month, some heavy gales, but not much R, although the number of rainy days was large.

MARCH.

I. *Camden Road*. From 8th to 30th, 23 days, without R.—*Muswell Hill*. No R for 23 consecutive days, from 8th to 30th, the longest period without R since I commenced observing in 1872 ; rainfall $\cdot80$ in. below average.—*Pinner Hill*. Easterly winds prevailed on 21 days.—*Enfield*. The month from the end of the first week to the last day was remarkably fine and dry ; slight S on 22nd, fog on 7 days, frost on 14 nights.

II. *Abinger Hall*. I do not remember a more favourable March ; dry, with much sunshine, enabling arrears of work to be made up ; ice formed on 28th and 29th.—*Croydon, Addiscombe*. This was a

mild, exceptionally dry, and singularly bright month, with a rather humid and unusually windy atmosphere. It was remarkable as being the second very dry March in succession ; for a rainless period extending over upwards of three weeks ; for the continued high wind of the 2nd ; for a very rapid rise and fall of temp. on the 25th, and for the cloudless character of its evening hours.—*Hythe*. A very fine dry month.—*Bromley Common*. A beautiful dry month, with occasional slight frosts and E. winds.—*Littlehampton*. Fine growing weather throughout ; marked scarcity of birds.—*W. Brighton, Blatchington Road*. E. winds very prevalent ; no R from 7th to 31st, the longest dry period during the year.—*St. Leonards*. A fine dry month on the whole ; no R fell between the 7th and 31st, E. winds prevailing almost all that time.—*St. Lawrence*. A lovely month, no R from 7th to 31st.—*Southampton, Woolston Lodge*. Temp. on 8 nights below 32° ; 4 weeks drought ; max. temp. 64°·8., min. 27°·5.

III. *Datchworth*. Great prevalence of E. wind, with dry weather ; R much below the average.—*Buntingford, Throcking Rect.* With the exception of ·02 on 4th, and ·01 on 7th, no R fell between 3rd and 31st ; slight S on 22nd.—*Addington*. Altogether a very fine month for agricultural operations, much drying wind.—*Stonor Park*. The finest March I can recollect.—*Cambridge, Merton Villa*. A dry period from the 3rd to the 31st ; wind prevailed from easterly points from 11th to 28th, with much frost by night, and bright days.

IV. *Sheering Rect.* No R for 23 consecutive days, from 8th to 30th inclusive.—*Rendlesham*. Weather as a rule fine and dry ; from the 7th to 28th E. winds prevailed.—*Diss*. A month of magnificent weather, with abundance of March dust. Wind generally N.E., and the sun very brilliant ; no R for 26 consecutive days, from 5th to 30th.

V. *Trowbridge, Holt*. No R for a period of 21 days, from the 10th to the 30th.—*Compton Bassett*. The first nine days were showery, with boisterous N.E. winds ; from thence to the 31st, dry, bright and sunny days, but cold nights with frequent frosts.—*Babbacombe*. A mild damp month, rainfall slightly above, and number of wet days below their respective averages. The weather was warm and wet, with S.W. winds in the first week, but from the 7th to the 29th it was generally dry, with E. winds ; fog was unusually prevalent in the second week ; no S ; H on 1st.

VI. *Newnham-on-Severn*. Much E. wind ; sunny, with a clear atmosphere.—*Cheltenham*. A dry calm month, with uniform bar.

pressure, except at the beginning and end.—*Ross*. E. and N. winds prevailed from 7th to 30th, the days being often bright and warm, and the nights frosty. A fine month for farming operations.—*Sansauv*. A particularly fine month, scarcely a day without much sun, but winds always cold.—*Cheadle*. A very dry month, with much E. wind.

VII. *Loughborough*. Comparatively dry, only six rainy days; total fall 1·79 in.—*Goston Rect.* The first few days stormy, but from the 9th to the 30th fine, with cold drying winds, generally from E. and N.E.—*Strelley Hall*. A dry month; the total rainfall 2·39 in., being chiefly made up of two heavy falls; only six rainy days; first four days wet; from the 5th to the 30th only one rainy day. Wind in the E. from 14th to 29th.—*Workshop, Hodsock Priory*. A good deal of R on the first three days and the last day, the rest of the month (except the 9th) very dry, with fine calm weather and frequent fogs; temp. about the mean.

IX. *Wakefield, Stanley Vic.* The month was all that could be desired for seed sowing from the 12th to the end, and R in abundance came when it was required.—*Scarborough*. After the first few days the weather became settled, and dry cool E. winds prevailed up to the end. Bar. high and steady during the last three weeks; mean. temp. and rainfall slightly above average.—*Forcett Park*. Fine and dry.

X. *Elterwater*. A very beautiful month, with the exception of the first few days.

XI. *Llanfrechfa*. A very fine month, favourable for farming operations.—*Castle Malgwyn*. Latter part of month very fine, with E. winds; sharp frosts on several mornings.—*Menaifron*. March began with a W.S.W. gale and heavy squalls, strong breezes up to 7th, after which they were mostly light to end of month; T on 11th; fine month for farming work.

XII. *Crichton Inst.* With the exception of a few days at the beginning and end, the month was dry and fine; winds generally light, except at the beginning of the month.

XV. *Rothsay, Barone Cottage*. Remarkably fine.

XVI. *Dalnaspidal*. A good deal of frost and S.

XVIII. *Lochbroom*. No living man has ever seen such a beautiful March before; work of every kind is far advanced, and vegetation is as forward as it was at the beginning of May, 1879.—*Glenfinnan*. Beginning of month extremely wet, stormy and cold; from 13th to

27th exceptionally fine, bright and sunny ; last few days showery.—*Sligachan*. A very fine dry month, except the first six and three last days, during which all the R fell ; keen frost from 20th to 29th.

XIX. *Watten*. The month opened with rough weather, but during the greater part the days were dry and mild, and the nights frosty.

XX. *Castle Lough*. The first part of the month rather wet ; towards the latter part E. winds prevailed, with sometimes slight frosts at night.—*Newcastle West*. The month was remarkably fine after the 3rd ; vegetation forward ; frost on three days, H on three days.—*Miltown Malbay*. A fierce S.W. gale, with T, L, and a deluge of R on the 1st and 2nd, causing unparalleled floods, which washed away two bridges, did various other damage, and made the land so wet that no work could be done on it for a fortnight ; remainder of month fair but cold.

XXIII. *Newtownards*. No R from 16th to 30th ; dry E. wind, extremely favourable for farming operations ; planting of potatoes and grain well forward.—*New Barnsley*. A fine dry month after the 5th ; from 18th to 28th frosty nights, but no injury to vegetation ; lands in fine condition.—*Bushmills*. A very fine month.—*Killygarvan*. A fine month, rainfall and temp. both below the average.

APRIL.

I. *Muswell Hill*. The first half of the month was very wet, the latter half dry.

II. *Abinger Hall*. A warm growing month up to the 26th, when the wind shifted to E., and remained in that quarter to the end of the month.—*Croydon, Addiscombe*. This month may be concisely described as having been seasonable and equable in temp., rather wet and somewhat dull, with an exceptionally windy atmosphere of average humidity. It was remarkable as being the fourth wet April in succession ; for the unusual prevalence of N.E. winds, and generally for its seasonable character.—*Hythe*. A fine month with drying winds.—*Bromley Common*. Rather wet at the commencement of the month, fine in the latter part, but rather cold throughout. Vegetation late. Migratory birds late in arrival, and very few in number.—*Littlehampton*. First part of month nice growing weather ; latter part severely cold.—*St. Leonards*. Much bright sunshine and frequent showers, and although N.E. winds predominated the month was mild throughout, there being no frost either in the air or on

grass.—*Southampton, Woolston Lodge*. Changeable; max. temp. 64°·5, min. 31°·8.

III. *Datchworth*. Changeable; frequent showers of R, with some heavy falls, made the total rather high.—*Buntingford, Throcking Rect*. A dull month, with much atmospheric disturbance in the early part. T heard on 4th, 6th, 7th, and 22nd; several storms of hail. Cuckoo heard on 24th.—*Addington*. Altogether not an unfavourable month, for although R fell on a large number of days, it did not interfere with the working of the land.—*Stonor Park*. First half very wet but mild, last half very dry and windy, chiefly from N. and N.E. The nights cold, but frosts not severe enough to injure vegetation.—*Cambridge, Merton Villa*. Periods of heavy showers were followed by cold and dry N.E. winds in the second and last weeks; no sharp frosts; fruit trees and wheat both promising well.

IV. *Rendlesham Hall*. The finest spring month we have had for years; prevalence of E. winds.—*Diss*. Magnificent weather during the first three weeks, then colder, with N.E. winds, but still fine; gardens and crops looking well.

V. *Compton Bassett*. The weather throughout the month was harsh, cold and showery, with several frosts during the last week.—*Langton Herring*. Nearly all the R fell in the first half of the month. Mean temp. half a degree above the average of 8 years. The months generally was free from fog, the nights were cold, and the days bright and sunny.—*Babbacombe*. A seasonable month, the weather being showery, with strong drying winds and much warm sunshine. The rainfall was less, but the wet days more than their respective averages. The temp. was about the average; the total range was small, but the daily range often great.

VI. *Newnham-on-Severn*. Very cold and windy.—*Cheltenham*. A dry month; R much wanted at the end.—*Ross, The Graig*. Rainfall less than usual; much bright weather, with cold N.E. wind; vegetation backward, owing to the cold wind.

VII. *Loughborough*. A wet month, 21 rainy days; total fall 1·51 in. T on the 5th and 22nd; hail on 4 days.—*Coston*. A real showery April, perfect, but for the prevalence of cold N.E. winds at the middle and end of the month.—*Strelley Hall*. A dry month. Total fall of R 1·22 in., ·84 in. of which fell in the first 4 days. From the 17th to the 9th of May only ·10 in. of R fell on 4 days.—*Worksop, Hodsock Priory*. Temperature normal; rainfall rather small.

VIII. *Walton-on-the-Hill*. Month generally cold, but dry and fine.

IX. *Wakefield, Stanley Vic.* The weather was cold, but with only three frosty nights ; favourable in the highest degree for farming operations.—*Scarborough.* Mean temp. $0^{\circ}9$ above the average of 12 years, rainfall $\cdot 51$ in. below the mean. The first week was wet, with some H and TSS, the remainder dry with occasional strong breezes.

X. *Easdale.* Fine dry weather.—*Shap.* A cold, wet, windy month.

XI. *Castle Malgwyn.* A very cold month throughout, sharp frosts on 29th and 30th.—*Menaifron.* Fresh to strong breezes most of the month ; heavy S.S.W. gale on 18th, gale on 25th.

XII. *Crichton Inst.* Rather a dry month ; although showers were pretty frequent they were generally light, except from the 18th to the 21st, during which time high winds prevailed.—*Melrose.* Mean temp. 2° below the average, rainfall about the average, wind chiefly W. and S.W., moderate in force.

XVII. *Tomintoul.* Temp. much below the average ; keen frosts on three or four nights.

XVIII. *Lochbroom.* The month was everything that could be desired, the little R was so well distributed that it served every good purpose.—*Glenfinnan.* The beginning of the month was exceedingly mild and warm, but towards the middle the weather turned colder, with some high wind ; the end of the month was fine and genial.—*Sligachan.* A rather cold, changeable month.

XIX. *Forsinard.* Fine and dry from 13th to 28th.—*Watten.* Though dry and suitable for field operations, the month was rather cold and ungenial, with frequent E. and N.E. winds.

XX. *Glenville.* A glorious spring month.—*Tipperary.* The weather was variable up to the 22nd, but after that date became settled, with warm sunshine by day and frost at night.—*Castle Lough.* The first part of the month was mild and seasonable, but the latter part cold, with frequent frosts at night.—*Kilrush.* The month was very changeable, wet, wild, and cold, the late frosts doing much injury to vegetation.—*Miltown Malbay.* The first week was wild and wintry, during the second cold winds with slight frosts prevailed, and the remainder of the month, with the exception of the last few days which were dry, was wet and squally.

XXIII. *Newtownards.* On the whole a favourable month for farming operations.—*New Barnsley.* Grand month for farmers, plenty of moisture and sun, and no severe frosts ; end of month very fine.—*Killygarvan.* Rather wet, with some high wind, but no frost ; mean temp. $1^{\circ}5$ below the average.—*Buncrana.* The weather was favourable for sowing, and planting potatoes.

MAY.

I. *Muswell Hill*. Total rainfall less than a sixth of the average.

II. *Abinger Hull*. A very dry month ; vegetation suffering from want of R towards the close.—*Croydon, Tanfield Lodge*. The driest May during the last 20 years ; rainfall $\cdot 41$ in., average $1\cdot 71$ in.—*Croydon, Addiscombe*. This, the last of the spring months, may be described as having been on the whole seasonable in temp., most exceptionally dry, and very bright, with a singularly windy and dry atmosphere. It was remarkable as being the second month in succession of average temp., for the few occasions on which R fell, and the very small amount deposited, for the high shade temp. registered on the 26th, and for a most unusual prevalence of north-easterly winds.—*Hythe*. An exceedingly dry month ; N.E. winds prevailed on 20 days.—*Bromley Common*. A fine dry and generally warm month, but with some sharp frosts, which did much damage to fruit blossoms.—*Littlehampton*. A remarkably dry month ; grass in some fields quite dried up.—*Brighton, Blatchington Road*. E. winds almost the whole month ; very dry ; only $\cdot 38$ in. of R.—*St. Leonards*. A most remarkably dry and fine month. N.E. winds prevailed until the 20th, and from thence to the 30th S.W. ; bar. high.—*Winchelsea, The Friars*. May was the driest month during the past five years.—*Southampton, Cadland*. Smallest fall of R in May since 1876, when $0\cdot 33$ in. fell.—*Southampton, Woolston Lodge*. Excessive drought and sudden extremes of temp. ; max. temp. $77^{\circ}\cdot 2$, min. $29^{\circ}\cdot 5$.

III. *Datchworth*. Very dry, with plenty of sun ; N.E. winds prevalent ; R much below the average.—*Buntingford, Throcking Rectory*. A remarkably dry month ; rainfall very much below the average. T heard on 26th and 28th.—*Stonor Park*. A very dry month ; scarcely any R till the 27th.—*Cambridge, Merton Villa*. Drought prevailed with one day's exception for nearly four weeks. Weather generally bright and sunny, but temp. low till the end of the third week, when a warmer period set in.

IV. *Rendlesham*. Very dry, with a great amount of E. wind, and plenty of sunshine, but the nights were cold.—*Diss*. A month of bright cool weather ; some slight frosts, but only one that did any damage to vegetation. Towards the end of the month the crops and gardens began to feel the want of R ; wind generally E. or N.E.

V. *Compton Bassett*. The weather up to the 24th was bright and dry, with high E. and N.E. winds, and four frosty nights ; from that date to the end of the month, showery and unsettled.—*Langton*

Herring. Mean temp. $53^{\circ}\cdot8$, rather above the average.—*Babbacombe.* A very fine dry month ; rainfall only one-third of the average, scarcely any falling before the 26th. Mean temp. slightly below the average, the nights being particularly cold till the 19th ; on the 20th and 21st the temp. rose to 75° , being 4° above the highest temp. of last summer.

VI. *Bristol.* The month was extremely dry until the last few days.—*Newnham-on-Severn.* Dry, but unsettled, with much E.N.E. wind.—*Cheltenham.* A dry month ; everything nearly burnt up.—*Ross, The Graig.* Very dry till the 24th, the weather being clear, with keen winds and cold nights. Last week of month very wet.

VII. *Loughborough.* Moderately dry ; 11 rainy days ; total fall, 1.26 in. TS, with a heavy shower of H on the 11th.—*Strelley Hall.* A dry month. Total fall of R, 1.68 in. ; of this 1.10 in. fell in the last week. Wind E. or N.E. from 1st to 18th, during which period there were only 4 rainy days.—*Worksop, Hodsock Priory.* Temp. below the mean, though higher than in 1879 ; rainfall about the average.

VIII. *Walton-on-the-Hill.* Extremely dry up to the 26th, after that date very unsettled.

IX. *Stanley Vic.* The dry weather of the early part of the month was most favourable for cropping, and the R came when it was required.—*Scarborough.* The first half of the month was cold, with N. to N.E. winds, and small rainfall ; the temp. then rose to the average, and during the last week became warm, with copious rains. Mean temp. slightly below, rainfall slightly above, the average.—*Forcett Park.* A fine month.

X. *Shap.* A very windy, dry, cold month. Hay very backward.

XI. *Castle Malgwyn.* Cold N. to E. winds the greater part of the month, and vegetation made little progress.—*Carno, Tybrille.* A very cold month.—*Menaifron.* No R for 22 consecutive days. Wind light, mostly from N. and E. T heard on 20th.—*Douglas.* A very dry month, with exceedingly low shade temp., though much bright sunshine. Wind strong, mostly E.N.E.

XII. *Crichton Inst.* A dry and rather ungenial month, with temp. about the average, and pressure unusually low.—*Melrose.* Cold and very dry ; vegetation making little progress.

XVI. *Kemback.* A very unusual prevalence of N. winds ; hay crop very poor, owing to drought and cloudy weather ; other crops suffering seriously in places.

XVII. *Tomintoul.* Month distinguished by cold winds and night frosts.

XVIII. *Lochbroom*. The weather of the first part of the month was changeable, followed by a very fine period; from 19th to 26th was very stormy and cold, with H, S, R, T and L, but the last few days were beautiful.—*Sligachan*. Month very dry and cold. Crops and stock in a forward state.

XIX. *Watten*. The month was very dry, with variable temp.

XX. *Tipperary, Henry Street*. Very dry, with easterly winds and frosts at night. Some high day temperatures in the latter part of the month.—*Castle Lough*. Although there was a good deal of sunshine the winds were cold, and frosts at night were frequent, so that on the whole the month was anything but genial.—*Kilcornan*. The month was very dry, the days generally hot and parching, and the nights frosty. Prevailing wind, N.E.—*Kilrush*. A fine month, but the cold winds and frosts injured fruit trees, and kept vegetation backward.—*Miltown Malbay*. A cold dry month, most of the nights having a tendency to frost; the days were sunny, with stiff, cold winds parching the earth and preventing vegetation.

XXII. *Ballinasloe*. Weather generally fine and dry, with very harsh winds from N.W. to E. towards the end of the month.

XXIII. *Newtownards*. Very dry, bright and cold from 1st to 10th, with N. winds.—*New Barnsley*. Remarkably fine month; crops, except on light gravelly soil, doing well. Hard frost on the night of the 7th, which did little harm except to early potatoes in exposed situations.—*Killygarvan*. A very fair month, for although the mean temp. was low, there was a great deal of sunshine; rainfall small; a considerable amount of wind.—*Buncrana*. On the whole a fine month; very favourable for cutting and drying turf, but at times cold and stormy.

JUNE.

II. *Abinger Hall*. The month was somewhat stormy, and at times foggy and dull, but withal very growing; more or less frost on the first ten nights.—*Croydon, Addiscombe*. This month was cold, extremely wet, and singularly dull, with a windy and particularly humid atmosphere. It was remarkable for its great similarity to the same month last year, as being the third very wet and the second very cold June in succession, for the highly electrical condition of the atmosphere prevailing during the greater part of it, for the low min. temp. registered on the 5th, and for the unusually cloudy character

of its evening hours.—*Hythe*. A dull wet month ; vegetation luxuriant.—*Bromley Common*. A showery month, and generally cool, particularly at the beginning ; very little wind ; grass thin and late, but vegetation not so backward as was expected.—*Littlehampton*. A fine growing month ; hay crop very light ; very few swallows seen, butterflies, caterpillars, slugs, and snails rare.—*St. Leonards*. A cloudy and rainy month.—*Southampton, Woolston Lodge*. Changeable, with a great deal of T ; max. temp. $75^{\circ}2$, min. $36^{\circ}9$.

III. *Datchworth*. Damp and rainy ; the total is not large, though R fell on a great many days.—*Buntingford, Throcking Rect.* Rainfall very slightly under the mean for the district ; TSS on 14th and 24th, T heard on 25th.—*Addington*. A showery month, fine growing weather ; crops of all kinds looking very well ; haymaking general by 25th, crop light ; T rather frequent, but never very near. Ash trees not well in leaf till 17th.—*Stonor Park*. The month commenced cold, but changed warmer after the first week, and vegetation of all kinds made rapid progress ; the latter part of the month was very stormy, with much T and L, and sunshine was much needed at the close.—*Cambridge, Merton Villa*. On the whole an unsettled month ; R frequent and heavy, very beneficial to the growing crops ; TSS prevailed from 22nd to 25th ; no warm weather in the early part of the month.

IV. *Ipswich, Bishop's Hill*. A fine growing month, but with many sudden and great changes of temp.—*Rendlesham Hall*. Strong N. to E. winds prevailed in the first part of the month, but after the 10th the weather was finer ; the latter part of the month was very hot.—*Diss*. A month of heavy rains, with bright and pleasant weather in the intervals, but no great summer warmth. Garden produce good and abundant ; the hay harvest does not promise to be large, and the rains towards the end of the month impeded operations considerably.

V. *Trowbridge, Holt*. Mean amount of cloud, 7·4, the greatest of any month during the year.—*Compton Bassett*. The weather during the month was generally cool, cloudy, and showery, interspersed with a few fine, bright, and sunny days ; no TSS.—*Babbacombe*. A cold, damp, cloudy, and showery month ; rainfall slightly above the average ; mean temp. ($56^{\circ}3$) below the average, the nights till the 12th being particularly cold, the min. temps. of the 10th and 12th being the lowest yet observed here in June ; pressure about the average ; fine weather prevailed till the 12th, and occasionally in the last week ; fogs were prevalent from 14th to 20th.

VI. *Newnham-on-Severn*. Unseasonable frequent April-like showers. R 20 on days.—*Cheltenham*. A dull, damp month, with comparatively low barometric pressure.—*Ross*. Almost as cold as June, 1879, and rainfall on nearly as many days, but smaller in quantity ; a good deal of electrical disturbance ; haymaking very backward.

VII. *Loughborough*. Very stormy ; 18 rainy days, total fall 3·81 in. TSS. on 4 days.—*Coston Rectory*. Although the mean temp. was very little above that of June, 1879, it was a more seasonable month, owing to the greater amount of sunshine ; frequent TSS, but none very severe.—*Strelley Hall*. A wet month ; many TSS ; only 10 days without R.—*Worksop*, *Hodsock Priory*. The first month of a wet period, which lasted till the end of the year ; temp. low, the first fortnight being about 5° below the mean.

X. *Easdale*. Last week very wet.—*Mardale*. Last week of the month very dark and wet.

XI. *Llanfrechfa Grange*. The temp. of the first part of the month was low, the nights being cold, and frosts on ground frequent ; T or L daily from 17th to 27th.—*Castle Malgwyn*. The greater part of the month was cloudy and showery.—*Menaifron*. Much electrical disturbance from 7th to 21st ; light winds ; a fine growing month.—*Douglas*. Cold, sunless, and dry.

XII. *Crichton Inst.* The rainfall was below the average, and fell in light showers, pretty equally distributed over the whole month, excepting the heavy fall on the 29th ; pressure high and mean temp. about the average ; T was heard on three occasions ; the month altogether was genial.—*Melrose*, *Abbey Gate*. An unusually dry month, rainfall only half the average ; mean temp. 54°·9, about 2° below the average ; T very frequent ; hay crop light.

XVI. *Kemback*. Very fine weather till the 12th, the showers falling mostly at night ; from that date to 19th E. and N.E. winds, with clear sky, and little R ; on the 20th the weather changed, the winds becoming variable, and charged with moisture, and there was little sunshine during the remainder of the month.

XVIII. *Lochbroom*. The month was on the whole a splendid one ; in the first week there was a good deal of R, which was much required, followed by 15 days of beautiful weather, dry and hot, and the remainder of the month was showery.

XX. *Glenville*. A very fine month.—*Tipperary*. A fine month.—*Miltown Malbay*. Harsh, dry, cold, easterly winds, with occasional H showers, and light frosts at night prevailed in the first half of the

month, retarding vegetation, and making the month more like March than June. After a heavy fall of R on the 12th, better weather set in, and on the 17th the real June calm and warmth commenced, with distant T, and warm showers forcing vegetation and the crops in an unexampled manner.

XXII. *Kilconnell*. The weather of the month was most propitious for the crops.

XXIII. *New Barnsley*. A fine month, occasional showers assisting vegetation greatly ; all crops, with the exception of grass, look well and promise abundance.—*Stewartstown*. Rainfall about the average.—*Killygarran Glebe*. The early part of the month was cold, with a sharp frost on the 9th, which injured potatoes in bog ground ; mean temp. 2° below the average.—*Buncrana*. Month very fine and seasonable throughout ; crops looking well.

JULY.

I. *Muswell Hill*. Rainfall rather more than 2 in. above the average ; only 8 days without R.—*Enfield*. The rainfall was almost entirely the result of thunderstorms, which were of remarkable frequency, and did great damage to the crops.

II. *Abinger*. A very stormy month ; settled weather much needed.—*Croydon, Addiscombe*. July may be concisely described as having been seasonable, and equable in temp. ; dull and very wet, with a humid and rather windy atmosphere. It was remarkable as being the second wet, and the fourth cloudy July in succession ; for the highly electrical condition of the atmosphere prevailing during the greater part of it ; for the very slight changes in temp. that took place from day to day, and for the entire absence of any unseasonably hot day.—*Hythe*. A very wet and stormy month.—*Bromley Common*. A cool showery month, but the total rainfall was not at all excessive. This place has been remarkably exempt from the disastrous TSS which have prevailed. Vegetation very rapid and healthy.—*Littlehampton*. Very unsettled ; little sun or warmth, wind S.W. or W. nearly all the month.—*St. Leonards*. A wet and somewhat cool month ; frequent and very severe TSS ; wind chiefly from S.W. and W.S.W.—*St. Lawrence*. Rainfall rather above the average ; range of bar. remarkably small.—*Southampton, Cadland*. Heaviest rainfall on record for the month.—*Southampton, Woolston Lodge*. Violent storm on 30th July, with hail from the W. ; max. temp. 79°·5, min. 44°·8.—*Englefield*. In the month of July we had more R, and more T and

L than we have had for years, the very severe R causing floods in parts never before flooded.

III. *Datchworth*. Very wet, though the daily falls were not heavy till the last week ; much T.—*Buntingford, Throcking Rect.* A very wet month, only nine days without R ; heavy TS on 14th, '89 fell in two hours, *i.e.*, between 12 noon and 2 p.m. ; T heard on 10th, 13th, 15th, 17th, 21st, 26th, and 29th ; heavy R on 1st, 25th and 28th.—*Addington*. Temp. low, and rainfall excessive, no monthly fall for the last ten years has nearly equalled it ; TSS were frequent, those of the 15th and 17th being very severe.—*Filgrave Rect.* The rainfall in July, 7·10 in., was the heaviest I have recorded.—*Stonor Park*. Temp. high, and enormous quantities of R (total fall 9·30 in.) ; crops much beaten down, and sadly in want of dry sunny weather.—*Northampton*. The heaviest rainfall in any month during the last 14 years.—*Cambridge, Merton Villa*. A month of frequent heavy R and TSS ; fine weather never continued more than 48 hours.

IV. *Rendlesham Hall*. The month was remarkable for having some R almost every day, and very little sun.—*Diss*. A warm month, with heavy rains and frequent TSS ; very unfavourable for the hay crop ; much sickness during the month.

V. *Pewsey*. A stormy month, with much T.—*Trowbridge, Holt*. No less than eight visitations of T and L in the month ; R fell on 24 days, the greatest number in any month of the year ; from the 21st to August 3rd, 14 days' continuous rainfall, amounting to 2·10 in.—*Compton Bassett*. The weather throughout the month was cool, cloudy, and showery, with frequent TSS.—*Langton Herring*. Only ·88 in. of R fell from the 1st to the 24th inclusive, and 2·63 in. in the last week of the month, in which there were several TSS, though none of them were severe. Mean temp. 63°·3, about the average ; From the 10th to the 25th the bar. was very steady, the range in 15 days being only ·14 in.—*Babbacombe*. A showery but generally fine month ; rainfall slightly above the average, more than two-thirds of the total amount fell in the last seven days, greatly refreshing the pastures and root crops, which were suffering. Temp. about the average, and equable ; mean max. in sun 127°·7, unusually high. We escaped the severe TSS which ravaged most of the country, but T was heard on 3 days, and L seen on 6 days ; solar halos on 4 days.—*Crewkerne, Bincombe*. A stormy wet month, with TSS nearly every day, but not very heavy.—*Taunton, Hovelands Terrace*. The largest rainfall in July for 25 years.

VI. *Newnham-on-Severn*. A very wet and variable month.—*Cheltenham*. A dull damp month, with considerable electrical disturbance, but not many TSS.—*Ross, The Graig*. Remarkable for the large number of wet days and of TSS. Nearly twice as much R as in July, 1879, but more sun ; absolute max. temp. very low. Much hay spoilt.—*Sansau*. A most disastrous month for agriculture, hundreds of acres of hay spoiled ; hardly any got in in good condition—perhaps none. Potatoes rotting everywhere ; no wall fruit, very few apples, and no pears. Rainfall more than double the average ; T on 12 days.

VII. *Loughborough*. Memorable for the unusual prevalence of TSS, heavy R and floods ; 20 rainy days ; total fall, 5·38 in. Many tons of hay floated away and great damage done to property. TSS on 9 days.—*Coston Rectory*. A very stormy month, with constant TSS and heavy rains ; the hay harvest much interfered with, in some instances the crop quite lost. Great damage done at Melton by the floods of the 13th and 14th. Prospects of wheat harvest very gloomy.—*Partney*. A very wet and gloomy month, causing much apprehension as to its probable effect on the crops.—*Strelley Hall*. A very wet month, the total fall being 6·16 in. Only 6 days without R. Crops very much laid by heavy TSS during the last week of the month. Two falls of R of over 1 in. Ther. only above 70° on 4 days.—*Worksope, Hodsock Priory*. A very wet month throughout, with frequent TSS ; temp. low.

VIII. *Walton-on-the-Hill*. A cold, wet and unsettled month.

IX. *Stanley Vicarage*. Most unpropitious weather, both for hay and the flowering of corn.—*Scarborough*. Total rainfall nearly twice the average of 14 years, and the number of wet days more than twice the average, and the highest recorded. Mean temp. 1°·8 below the average. It is a curious coincidence that the highest bar. reading and greatest rainfall occurred on the same day.—*Forcett Park*. Very wet.

X. *Elterwater, Woodlands*. A cold month ; weather very broken, and bad for haymaking.—*Mardale*. Dark and showery weather.—*Shap*. Rather an unseasonable month, R having fallen on 22 days. Hay crop very heavy ; about two-thirds cut at the end of the month. Corn a good crop, but rather late. Potatoes and turnips look well.

XI. *Llanfrechfa*. Much distant T.—*Castle Malgwyn*. A showery month throughout, but no severe storms.—*Rhyl, Sedgley Ho*. Very wet and windy ; slight T showers.—*Menaifron*. A wet month. R fell on 20 days. T, distant or otherwise, each day from 9th to 17th.

Most severe storm on evening of 14th. Heaviest rainfall of any month in the year.—*Douglas*. A wretchedly cold, wet month ; temp. in shade never exceeding 70°. Bitter N.W. wind on the night of the 27th, and the temp. fell to 36°.

XII. *Crichton Inst.* The total fall of the month was considerably above the average, and weather generally moist, R falling on 20 days, very little sunshine ; the mean temp. was, however, nearly the average. Winds generally light. Only one TS, and that not very severe.—*Melrose*. Mean temp. of the month (55°·9) below the average, and rainfall above it. Clover hay scarcely an average crop ; meadow hay promises to be good. Turnips look well, though late ; potatoes are most luxuriant and promising. The harvest promises to be early.

XVIII. *Lochbroom*. A beautiful growing month ; grass was never more luxuriant. Crops look magnificent, and everything is very promising to the agriculturist.—*Glenfinnan*. Very beautiful weather throughout the month, often sultry and generally warm, with a great deal of sunshine. Prevailing wind, S.E.

XIX. *Watten*. Very warm and sunny ; an excellent month.

XX. *Castle Lough*. A very wet month, but the temp. was high and the crops did not suffer much till the latter end of the month. T was unusually frequent, and much cattle was killed by the L.—*Kilrush*. Very wet, fresh, and changeable ; some days quite winterly, and it is to be feared that the constant heavy rains have done much harm to some crops, particularly to potatoes.—*Miltown Malbay*. A favourable month on the whole ; the first week was rather cold and boisterous, but the remainder was calm, warm and sunny, and though much R fell it dried up quickly.

XXII. *Ballinasloe*. First part of month fine ; very heavy rains, accompanied by distant T, in the latter part. Considerable floods from 22nd to end of month. Wind very moderate.—*Kilconnel Rect.* A most dreary, wet month, causing great anxiety respecting harvest prospects.

XXIII. *Newtownards*. The wettest month since July, 1876. All crops most luxuriant ; no potato blight.—*New Barnsley*. A very wet month, and the ground so warm that vegetation of every kind is luxuriant ; hay crop suffering.—*Killygarvan Glebe*. Rainfall very heavy, but owing to the hot sun, and the R falling mostly at night, there was no harm done to the crops, which are remarkably fine.

AUGUST.

I. *Muswell Hill*. A remarkably dry month ; total rainfall barely one-fifth of the average.—*Enfield*. The month, though dull and close, was very dry, and harvest made rapid progress.

II. *Abinger Hall*. The month was very favourable for all out-door operations ; the mornings were generally hazy or foggy, but bright days followed.—*Croydon, Addiscombe*. This, the last of the summer months, proved warm, very dull, and extremely dry, with winds of average strength, and an atmosphere exceptionally humid. It was remarkable as being the fourth cloudy August in succession, for a long term of dry weather, for a very high degree of humidity existing together with a singularly light rainfall, for the great prevalence of N.E. winds, and for the limited duration of bright sunshine.—*Hythe*. A fine harvest month.—*Bromley Common*. A beautiful harvest month ; vegetation growing splendidly after the rains of July. Corn all in by the end of the month.—*Brighton, Blatchington Road*. A magnificent month for harvest.—*St. Leonards*. A fine dry month, wind chiefly from N.E. ; very warm and close during the last week, with frequent L in the far S., and very distant T at times.—*St. Lawrence*. The driest August I have known ; wind E. for 21 days ; harvest was nearly completed by the end of the month.—*Southampton, Cadland*. Lightest rainfall in August since 1861.—*Southampton, Woolston Lodge*. Very fine month after the 8th ; max. temp. 77°, min. 45°·2.

III. *Datchworth*. Damp at the commencement, but gradually became drier and warmer ; hardly any R after the 8th, and total fall very deficient.—*Buntingford, Throcking Rect.* A dry, fine month ; T heard on 2nd and 6th ; a good deal of L visible towards the end of the month.—*Addington*. A fine month, not very much sunshine till towards the end ; wind almost always N.E. ; no high temperatures.—*Stonor Park*. A very favourable month for harvest, crops of all kinds good.—*Oxford, Magd. Coll.* Only 4 days on which the fall of R exceeded ·01 in., prevailing wind N.E. ; crops very fine, and harvested in good condition.—*Cambridge, Merton Villa*. A month very favourable to harvest work. Drought prevailed uninterruptedly from the 8th to the 26th ; the R fell in TSS at the beginning and end of month.

IV. *Sheering*. The driest August in 17 years (total fall ·98 in.), with the exception of 1871, when only ·63 in. fell.—*Ipswich*. From,

and including the 9th, the weather was all that could be desired for the harvest ; persistent N.E. wind prevailed during the last 3 weeks.—*Rendlesham Hall*. The month was mostly bright and fine, with one severe tempest ; particularly bright summer weather in the latter part of the month.—*Diss*. At the beginning of the month the hay (much of which was damaged by the wet of July) was still unmade, but magnificent weather set in on the 2nd, and continued with only two short interruptions to the end of the month ; bright warm sun, with refreshing N. airs prevailing. On the 9th harvest was fairly begun, and by the end of the month was three-parts over, and the yield will not be short ; root crops look strong and well.

V. *Compton Bassett*. The weather throughout the month was splendid for the cutting and ingathering of the harvest.—*Langton Herring*. The weather was most favourable for the harvest.—*Babbacombe*. A hot and very dry month ; rainfall only about one-ninth of the average ; temp. above the average, particularly at night. The bar. was low on the 1st, 2nd, and 7th ; it then rose rapidly till the 10th, after which it was remarkably steady till the 24th. W. winds prevailed till the 9th., N.E. winds after the 10th. Fine bright weather prevailed from 8th to the 11th, but dull, gloomy weather from the 23rd to 26th, and on most mornings after the 15th. The harvest was completed by the 28th, and the yield was good.—*Kilworthy Hill*. Much T and L during the month.—*Taunton, Hovelands Terrace*. The smallest rainfall in August during the last 25 years. Total fall, .17 in.

VI. *Bristol, Ashley Down*. A very dry month, rainfall less than one-sixth of the average ; only two light showers after the 7th. Mean temp. $62^{\circ} \cdot 2$, rather above the average.—*Newnham-on-Severn*. Much E. wind, but a longer dry period than for many months.—*Cheltenham*. An excessively dry month, with a considerable amount of cloud. Bar. remarkably steady from 10th to 25th.—*Sansaw Hall*. A most beautiful harvest month, but too late to do any good to root crops.—*Ross, The Graig*. Total rainfall .30 in. ; the smallest rainfall ever recorded in Herefordshire in August, the nearest being August, 1818, when .52 in. fell. No R fell from 5 p.m. on August 7th to 5 p.m. on 5th of September—an interval of 29 days, which is the longest period without R since I commenced observing in 1859.

VII. *Loughborough*. Comparatively dry, only six rainy days ; total fall, 1.61 in.—*Coston Rect*. A very dry August. Great prevalence of N.E. winds after the 12th.—*Strelley Hall*. A dry month, there being

only .67 in. of R from the 9th of this month to the 10th of September, of which .54 fell during a TS on the night of the 29th. The wind was N.E. from the 11th to the 30th.—*Worksep, Hodsock Priory*. A heavy fall of R on the 7th (1.32 in.) was followed by three weeks of fine warm weather, which were of great value to the farmers for the harvest ; during the last few days TSS were frequent.

VIII. *Walton-on-the-Hill*. First week wet ; from 9th to the end of the month, a period of 23 days, completely dry.

IX.—*Scarborough*. Remarkable for the persistence of N. and N.E. breezes, which, however, were light and pleasant. Mean temp. $1^{\circ}8$ above the average, rainfall slightly below it ; very little sunshine from 12th to 28th.

X. *Whorlton*. Fine and warm.—*Easdale*. Very fine weather.

XI. *Llanfrechfa Grange*. Warm and sunny ; very favourable for harvest.—*Llandovery*. The driest August that we have had for several years.—*Castle Malgwyn*. The weather after the 7th was remarkably fine.—*Menaifron*. Wet until 8th, after which 23 consecutive dry days ; large fall in 9 hours on 7th, viz., 1.23 in. Hot from 20th to end of month, light breezes : on the whole a very fine month.—*Douglas*. The cold and miserably wet weather of July continued up to the 7th of August, when it suddenly became fine, and continued magnificent, without any R, till the end of the month. Wind E. and N.E.

XII. *Crichton Inst.* Remarkable for its high temp. and small rainfall. Bar. high and steady ; scarcely any T.—*Melrose*. A dry and warm month ; rainfall excessively small, but heavy dews frequent. The harvest was begun about the middle of the month, earlier than usual.

XVI. *Kembuck*. There could scarcely have been weather more favourable for the harvest, which was unusually early. The hay crop was light, but cereals were an abundant crop.

XVII. *Tillydesk*. The smallest rainfall of any month during the last 18 years, with the exception of February, 1863.—*Budgate, Cawdor*. Very warm, dry month.

XVIII.—*Lochbroom*. No words can express the beauty of the weather, the finest ever seen in the Highlands at this season ; not a drop of R after the 8th ; the sky almost cloudless, and the heat tropical.—*Glenfinnan*. For a few days at the beginning of the month the weather was wet and the temp. rather low ; but during the remainder of the month the sunshine was brilliant, and the heat almost tropical.—*Sligachun*. No R fell from the 9th to the 30th, in-

clusive. Heat very great during the month. Crops good and well advanced.

XIX. *Watten*. Very warm, calm, and the driest August record. We rarely experience so many consecutive warm days as we had during the fortnight from 7th to 21st.

XX. *Glenville*. The finest harvest month I have ever known.—*Tipperary, Henry Street*. A very fine month, and most favourable for the harvest.—*Castle Lough*. After the first week the weather became very fine and warm.—*Kilrush*. An exceptionally favourable month.—*Miltown Malbay*. First week cool and very rainy ; from the 7th to the end glorious warm weather, with cloudless skies, prevailed. Altogether the finest August experienced for very many years.

XXII. *Ballinasloe*. First part of month very wet, 1·99 in. of having fallen between 1st and 9th, but the rest of the month was very fine, bright and warm, excepting the 15th.

XXIII. *New Barnsley*. The finest and hottest August for many years ; harvesting operations all well forward, crops of all kinds good.—*Stewartstown*. Rainfall much below the average,—*Ramelton*. Fine, warm and sunshiny ; very small rainfall.—*Killygarvan Glebe*. A remarkably fine month, no R at all after the first week ; very warm occasionally, and very little cloud. Temp. 2° above the average.

SEPTEMBER.

I. *Muswell Hill*. Total rainfall about 50 per cent. in excess of the average of eight years.

II. *Abinger Hall*. First part of month fair, heavy rains in the middle, putting a stop to all harvest operations ; latter part fine, bright and warm ; harvest completed by end of month.—*Croydon, Addiscombe*. This autumn month, although a changeable one, may be concisely described as having been for the most part very warm, extremely wet, and seasonably bright, with an exceptionally damp and calm atmosphere. It was remarkable for being the third humid, and the second very wet September in succession, and the first warm one for five years, for the singularly high temp. registered on the 4th, for the unusual dryness of the air on the 3rd, for a very wet period in the middle of the month, and for a remarkably calm one at its close.—*Hythe*. Beginning and end of the month very fine, middle wet and stormy.—*Bromley Common*. Weather beautiful up to the 11th, when very heavy R set in, and fell daily till the 22nd.—*Little-*

hampton. Fine growing month.—*St. Leonards*. A fine month on the whole, the first and last weeks being particularly beautiful; from the 11th to the 22nd the weather was unsettled, and heavy R fell frequently.

III. *Datchworth*. First 10 days very fine and hot, then an excessively wet period of 8 days, including the max. fall of the year, 1·42 in. on the 11th, and also a fall of 1·26 in. on the 14th. Thence to the end damp and rather cold; total rainfall large.—*Buntingford*, *Throcking Rec.* Very hot the first week, with no R; heavy fall on 11th; T heard on 13th, when there was also a heavy fall of ·82 in.; T on 18th, H on 19th.—*Addington*. Early part of month very fine, middle wet and stormy.—*Stonor Park*. The beginning and end of the month were very favourable for all things; the middle of the month was very wet and wretched.—*Cambridge*, *Merton Villa*. The drought of August continued for the first 10 days of this month, and the harvest was a success in this district; wet weather, with TSS then prevailed for 10 days, and the remainder of the month was fine. Excessive heat for the first 4 days.

IV. *Sheering Rec.* The largest total rainfall in September for the last 17 years.—*Rendlesham Hall*. A very fine month, except from the 11th to the 18th; pressure and temp. both very high; from the 1st to the 12th the ther. in shade never fell below 62°.—*Diss*. Perfect weather during the harvest, which (except in the case of some “afternoon” farmers, as they are here called), was well over as regards the cereals, by the 11th. The barley crops were in some places very large, and the wheat was fairly good, with abundance of straw; root crops very fine. From the 10th to the 19th, inclusive, there was some disturbance, and frequent T showers, but after the latter date the weather was fine and pleasant to the end of the month.

V. *Compton Bassett*. The first part of the month was clear and fine, with a few showers at night; the second cloudy, squally, and very wet; the last part foggy in the mornings, but very fine and bright afterwards.—*Langton Herring*. Very wet from the 4th to the 20th, afterwards dry; mean temp. 3°·6 above the average.—*Babbacombe*. A warm damp month, with a considerable range of temp.; rainfall about the average; fine but foggy weather, with high bar., and E. or variable winds prevailed in the first and last weeks, and the remainder of the month was wet, with low bar. and S.W. winds. Fog unusually prevalent.

VI. *Bristol*, *Ashleydown*. An exceedingly wet period from Septem-

ber 9th to 18th ; rainfall of the month $\cdot 51$ in. above the average ; mean temp. 2° above it ; great heat on 3rd and 4th.—*Cheltenham*. The month opened with close weather, the highest temp. of the year occurring on the 4th ; heavy R set in on the 11th, and lasted for a week ; fine autumnal weather followed, foggy towards the close.—*Ross, The Graig*. The dry period which commenced on August 2nd, continued till the 9th of this month, except a sharp shower of about 20 minutes' duration on the 5th, and was the longest period without R during the last 22 years. From the 9th to the 20th, inclusive, $3\cdot44$ in. of R fell ; from the latter date to the end of the month calm and very foggy dry weather prevailed.

VII. *Loughborough*. Much R ; 12 rainy days ; total fall, $4\cdot84$ in. Max. shade temp. on the 3rd, $84^{\circ}\cdot 5$; on the 4th, $87^{\circ}\cdot 2$, the highest of the year. On the 12th $1\cdot69$ in. of R. Fog on three days.—*Coston Rect.* A very warm month, the max. temp. ($82^{\circ}\cdot 8$) higher than that of the years 1874, 1875, 1877 and 1879. Wet from the 10th to the 18th, hindering the harvest, so that it was not completed at the end of the month.—*Strelley Hall*. From the 1st to the 10th very fine and warm, enabling farmers to get some of their harvest in pretty good condition, there being only one fall of R ($\cdot 10$ in.) From 10th to 23rd only two days without R, during which period $4\cdot38$ in. fell ; from 23rd to end of month no R.—*Worksop, Hodsock Priory*. The first 10 days were fine and dry, the 3rd and 4th being very hot ; then followed a week of exceedingly heavy rains, causing serious floods in the neighbourhood ; from the 16th to 22nd the weather was finer, but showery, with TSS ; the last week warm and dry. Temp. and rainfall both above the mean.

VIII. *Walton-on-the-Hill*. On the whole, a fine, genial month, but a little unsettled.

IX. *Scarborough*. The month opened and closed with fine, dry weather ; but from the 10th to the 23rd R fell daily with one exception, making the total fall above the average. Mean temp. $3^{\circ}\cdot 5$ above the average of 12 years. Harvest not quite finished at end of month.—*Forcett Park*. Heavy rains in the middle of the month.

X. *Whorlton*. Heavy R in the middle of the month ; very fine and hot at the beginning and end.—*Easdale, Grasmere*. Very fine weather.

XI. *Castle Malgwyn*. A very seasonable month, with the exception of the week from the 8th to the 15th, which was very stormy and rough.—*Menaifron*. Middle of month wet ; warm and dry from 24th to end.

XII. *Crichton Inst.* The month generally was warm and genial; there was no frost, but towards the end, the mornings and evenings were cool. Mean temp. and rainfall both above the average.—*Melrose, Abbey Gate.* Mean temp., $53^{\circ}1$, 4° above the average. Rainfall $\cdot75$ in. above the average. Harvest finished by the middle of the month; crops above the average and in good condition. Wind chiefly S. and W.; force moderate.

XVI. *Kemback.* Weather on the whole favourable for agriculture. Cereal crops tolerably heavy, and of unusually good quality, for the most part gathered in in good order, notwithstanding the heavy rains between the 9th and 16th.

XVIII. *Lochbroom.* A remarkably fine month for harvest operations, which were finished before the end of the month; yield and quality both unusually good.—*Glenfinnan.* Remarkable for its great calmness; weather steadily wet throughout; temp. high and equable.

XIX. *Watten.* Very mild, but free from storms and floods.

XX. *Tipperary, Henry Street.* A splendid month.—*Kilrush.* A very fine month.—*Miltown Malbay.* The first and last weeks were fine and seasonable. Much R fell from the 9th to the 22nd, but on the whole it was a good month.

XXII. *Ballinulloe.* Month generally very fine, with light breezes, chiefly from S. and W.

XXIII. *Newtownards.* Wet from 9th to 24th, and much corn spoiled. Harvest nearly completed at end of month; root crops growing vigorously; potatoes good.—*Belfast, New Barnsley.* Fine till the 9th; broken weather from that date to the 24th, and fine weather again afterwards.—*Killygarvan Glebe.* A pretty good month; rainfall below the average, and only one gale. Mean temp. $1^{\circ}4$ above the average.—*Buncrana.* Weather very genial during the month, and propitious for harvest operations.

OCTOBER.

I. *Muswell Hill.* A thoroughly wet month; rainfall nearly double the average.

II. *Abinger Hall.* The month was very stormy and cold, with a heavy fall of S during the night of the 19th and on the 20th, doing great damage to oaks and elms. Heavy R fell on the 26th and 27th, flooding all low ground.—*Croydon, Addiscombe.* Most exceptionally cold, extremely wet, and peculiarly dull, with a windy and singularly

humid atmosphere. It was remarkable as being the second very wet month in succession, for the unusual prevalence of north-easterly winds, for the excessive rainfall of the 9th, for the extraordinary heavy fall of S for the season on the 20th, for the low atmospheric pressure recorded on the 28th, and generally for the wet and winterly character of the month.—*Tenterden*. The wettest October since 1865.—*Hythe*. The wettest month ever registered here; total rainfall, 10·25 in., nearly thrice the average amount.—*Bethersden*. A very wet month; 1·56 in. of R fell on 10th, 1 in. on 27th, and during the month 6·93 in.—*Bromley Common*. The wettest month on record since observations were commenced here in 1864. The S on the 20th was the earliest fall I have on record, and did considerable damage to trees in this neighbourhood, many large branches (of oak especially) being broken off.—*Eltham Green*. October was the wettest month since the commencement of the observations in January, 1869.—*Littlehampton*. Very little or no growth of vegetation. Enormous amount of R and wind; S, as usual, did not lie so near the sea.—*St. Leonards*. A very wet month, with a severe S.W. gale on 28th, doing much damage in the town.—*St. Lawrence*. Rainfall, 4·50 in. above the average of 10 years. In the latter part of the month the alternations of heat and cold were most remarkable, the max. temp. on the 20th being 38°·3, and on the 27th 60°·5.—*Newport, I. of W.* Probably the coldest October since 1842.

III. *Datchworth*. Early part and close excessively wet, with a fall of 1 in. on the 5th; cold on the whole, with heavy S as early as the 19th. Rainfall greatly in excess.—*Buntingford, Throcking Rect.* A wet month; heavy fall of R on 6th, also on 4th and 26th. Early S on 20th.—*Addington*. Beginning and end of month wet and stormy, causing very great floods.—*Stonor Park*. A very wet, cold, and dreary month; several sharp frosts.—*Northampton*. Rainfall greatly above the average of the last 14 years.—*Cambridge, Merton Villa*. Much R and floods during the first week, and at the close of the month; temp. much lower after the 18th.

IV. *Rendlesham Hall*. Very dull; much R. Prevailing wind, N. to E.—*Diss*. A wet month on the whole, with some fine days between the 11th and 19th; on the 20th the weather changed colder, and continued so till the end of the month.

V. *Pewsey*. A stormy month.—*Compton Bassett*. The first part of the month was rough and wet, the middle part fine and dry, the last part showery and windy, with several sharp frosts.—*Langton Herring*.

A very variable month, with sudden changes of temp.—*Babbacombe*. Very wet, cold and stormy, except from 12th to 18th, and on the last three days. The total rainfall was more than double the average, and was the greatest monthly fall since December, 1876. The temp. was variable, and the mean below the average. N.E. winds prevailed generally till the 26th, and W. thence to the 31st. Gales were frequent.—*Crewkerne*, *Bincombe Ho.* A cold stormy month, with heavy falls of S.—*South Petherton*. S on 19th; much R in the last week, with gales of wind.—*Ilebrewers*, *Walrond Park*. The wettest month of the year; two heavy downfalls, viz., 1.42 in. on the 6th, and 1.36 in. on the 25th.

VI. *Newnham-on-Severn*. Some storms early in the month, succeeded by bright, cool weather.—*Cheltenham*. A month of great atmospheric disturbance, but the great gale of the 28th was very little felt here.—*Ross*. The largest amount of R in October since 1843, and just double the average. It fell, however, almost entirely in two periods of about three days each, the 4th to the 6th, and 25th to 27th. Number of frosts on grass, and at 4 feet unusually great; probably the coldest October since 1842.

VII. *Loughborough*. Much R; 14 rainy days; total fall, 5.22 in. On the 4th, 1.51 in. of R; S on the 20th. Lowest shade temp. on the 24th, 24°.1; 21°.0 on the grass.—*Coston Rect.* Rainfall excessive. Temp. much below the average.—*Strelley Hall*. Wet to the 10th; from 10th to 26th only three rainy days; two falls over 1 in. in 24 hours.—*Worksop*, *Hodsock Priory*. The wettest month I have recorded in nearly six years, the rain nearly all falling during the first and last weeks, and causing on each occasion serious floods in the neighbourhood; the intervening period was fine and dry. Temp. much below the average throughout the month.

IX. *Scarborough*. The first and last weeks of the month were characterized by heavy rainfalls and gales. Air temp. 46°.8, 2° below the average; rainfall more than double the average.—*Forcett Park*. Wet; heavy R and S, and high wind on 27th and 28th.

X. *Mardale*. Very hard frost.—*Shap*. First half of the month fine and dry. Total rainfall very small; very little fog.

XI. *Llandovery*. Frosty weather set in early in the month.—*Castle Malgwyn*. A tolerably fine month up to the 20th, when a heavy S storm occurred, followed by an unusually severe frost. Heavy rains on 26th and 27th, lasting nearly the whole of two days, resulting in heavy floods, though they would have been worse had not the rivers

and streams been very low at the time.—*Menaifron*. Rather wet, excepting 9 days in middle of month ; extraordinary fall of 2·73 in. on 27th.

XII. *Crichton Inst.* Rainfall and temp. both very low ; from the 19th to the end of the month the frost was almost continuous.—*Melrose, Abbey Gate*. The month was chiefly remarkable for the early S on the 20th, for the severe frost on the 22nd, and for the storm of S and sleet (the worst known for many years) on the 27th, 28th, and 29th. Rainfall a little less than average ; mean temp. 3° below average.

XV. *Rothsay, Barone Cottage*. Dry and fine.

XVI. *Kemback*. The weather during the month was mostly fine and clear, especially in the latter half.

XVIII. *Lochbroom*. A very boisterous month.—*Glenfinnan*. Fine bright and calm weather ; temp. generally somewhat low.

XIX. *Watten*. Weather variable, but unusually severe.

XX. *Tipperary*. A very fine month.—*Castle Lough*. A very fine dry month, frosty and cold towards the middle.—*Miltown Malbay*. Altogether the finest and driest October within memory ; for 50 years the land at this period has not been known to be so dry. During the first week a very heavy and bitterly cold E. gale prevailed, but with little R ; from the 8th to the 25th the weather was beautiful and calm, with slight hoar frost ; on the 25th a bitterly cold storm set in from E., backing at night to N.E., and increasing in force next day, with sleet, S and R ; on the morning of the 28th it culminated in a furious snowstorm.

XXII. *Kilconnell*. The finest and most favourable weather of any month in the year, and probably the finest October remembered.

XXIII. *Dowra*. The finest October for many years.—*Newtownards*. Month dry and bracing ; first half very fine ; sudden change of temp. about the 17th.—*Belfast, New Barnsley*. Grand month for farmers ; the land in splendid order for getting in the seed. Water beginning to be scarce, springs nearly dry.—*Knockan*. A fine month.—*Stewartstown*. Rainfall much below the average.—*Killygarvan Glebe*. A very cold month, but fine ; very little R, and only one gale, which was not heavy ; a considerable fall of S for so early in the season, and some frost.

NOVEMBER.

I. *Muswell Hill*. Rainfall below the average.

II. *Abinger Hall*. A good deal of stormy and frosty weather in the middle of the month, but towards the end the weather became more

settled and genial.—*Croydon, Addiscombe*. This month, though characterised by frequent changes and marked contrasts of weather, was yet, on the whole, seasonable as regards temp. and rainfall; unusually bright, and with a very dry and extremely windy atmosphere. It was remarkable for its great freedom from fog, for the low atmospheric pressure recorded on the 16th and 18th, and generally for its singularly variable character.—*Hythe*. A very wet and stormy month.—*Bromley Common*. Rather a cold dull month, and very unsettled; the fluctuations of the bar. very remarkable. The warmth of the weather during the latter part of the month brought up the mean temp. considerably, making it slightly above the average.—*St. Leonards*. Many severe gales and sudden squalls.—*Southampton, Woolston Lodge*. Sharp frost at times; 8 nights below 32°, max. temp. 56°·3, min. 22°·5.

III. *Datchworth*. Generally mild, but with one short period of great cold.—*Buntingford, Throcking Rec.* Aurora visible on 3rd; a good deal of wind during the month; a few flakes of S on the 18th and 19th.—*Addington*. Rainfall a little above the average; frequent very sharp frosts; swallows seen on several days.—*Stonor Park*. A very cold month, very unfavourable for ground work.—*Cambridge, Merton Villa*. A variable month, frosty periods, succeeded by wild weather. Mean temp. 41°·2; not colder than the latter part of October.

IV. *Diss*. Cool open weather till 10th, then wet and cold, with gales till 17th; heavy R on 18th, and very cold till 22nd; S fell on 20th and 21st; a thaw began on 22nd, and the weather continued warmer, with R and L till 26th; the remainder of the month was warm and bright.

V. *Compton Bassett*. The beginning of the month was fine and open, the middle rough and showery, with a snowstorm on the 18th, and sharp frosts until the 24th, when the weather became mild and dry.—*Langton Herring*. The month was remarkable for the sudden and great vicissitudes of temp. The 2nd, 3rd and 4th were cold, followed by milder weather up to the 16th; a cold period set in again on the 17th, and lasted till the 22nd, and the remainder of the month was mild.—*Babbacombe*. Though the temp., rainfall and barometric pressure were about the average, the weather was very variable; on the first nine days it was generally fine and cold; from the 10th to the 16th warm, wet and stormy; from the 17th to the 22nd very cold; from the 23rd to the 30th it was mild, with S.W. gales and R till

the 26th. The bar. oscillated considerably; it was high till the 12th, on the 21st, and after the 27th, but low from the 13th to the 19th, and 23rd to 26th; strong S.W. winds generally prevailed after the 6th, but N.E. winds blew on the first five days, and from 18th to 22nd; S.W. gales blew from 13th to 16th.—*Crewkerne, Bincombe House*. A cold stormy month, with heavy falls of S.—*South Petherton*. Cold, with sharp frosts on some days; the ther. on stand below 30° on eight nights.

VI. *Newnham-on-Severn*. First 12 days cold and clear, succeeded by R and wind.—*Cheltenham*. Atmospheric pressure very unsteady. A slight sprinkling of S on the 18th, rather heavier on the hills, which were quite white on the 19th; the ice would just allow skating on the 22nd.—*Ross, The Graig*. From 2nd to 6th cold and dry, with N.E. winds; 7th to 15th very warm and wet, S. and W. winds; 16th to 23rd very cold and dry, N. and E. winds; 24th to 30th wet, windy and warm, winds S. to W. On the 22nd the max. was not higher than 27°, but the temp. had risen to 36°·1 by 9 a.m. on the 23rd.

VII. *Thorpe Arnold*. Several severe frosts during the month; temp. 18° and 20°; fieldfare seen on 9th.—*Loughborough*. Damp, but moderate fall of R; 14 rainy days; total fall 1·92 in. Slight falls of S on four days; lowest temp. on the 23rd, 20° in shade, 17°·1 on grass; 13 nights frost in air, 18 nights frost on grass.—*Coston Rectory*. Temp. very variable; the 10th to 14th, and 24th to 30th very mild; 18th to 23rd very cold; rainfall below the average.—*Strelley Hall*. Weather unsettled during this month, only one heavy fall of R, though a number of rainy days.—*Worksop, Hodsock Priory*. Alternate weeks of cold and warm weather. The month was generally dry, except a very wet week from the 12th to 17th.

IX. *Scarborough*. After the 12th the bar. fluctuated considerably, R, S and H showers being experienced during the following fortnight, after which the weather cleared and became milder; mean temp. 0°·7, above the average, rainfall 1·01 in. below it.

X. *Easdale, Grasmere*. Very wet weather.—*Mardale*. Very wet weather.

XI. *Llanfrechfa Grange*. A fine and mild November.—*Menai-fon*. Weather not characteristic of the month, there being no fog; R on 19 days, gales and strong breezes, chiefly S.W., from 13th to 16th, and 23rd to 28th; very heavy on the 26th and morning of 28th, from S.S.W. and S.W.—*Douglas, Victoria Road*. A succession of heavy gales and R.

XII. *Crichton Inst.* Wet, stormy and cold, though the mean temp. was only a little below the average. The frost was very severe for a week at the beginning of the month, and for another week, commencing on the 15th; S fell on the 18th, and sleety showers were frequent. From the 23rd there were several severe gales from S.W.—*Melrose, Abbey Gate.* The month was remarkable for the quantity of S, nearly 8 in. having fallen on the 18th, 19th, and 20th. Rainfall 1 in. above the average, and consequent floods. Very severe frosts on the 21st, 22nd and 23rd, the min. temp. in shade being $-1^{\circ}5$, $3^{\circ}5$, and $5^{\circ}5$ respectively; mean temp. $2^{\circ}5$ below average. The month closed with S.W. gales.

XV. *Rothsay, Barone Cottage.* Changeable and wet.

XVI. *Kemback.* Sharp frost at night from 15th to 24th, and from 20th to 22nd the temp. never rose to 32° . Very stormy from 25th to 29th, many persons considering the gale on the 26th stronger than the Tay Bridge storm.

XVIII. *Lochbroom.* This month exceeded in intensity of frost, severity of gales, and amount of R, any we have had for years.—*Glenfinnan.* Early part of month very wet, with high temp., except the first three days, which were cold; about the middle of the month hard frost prevailed, with bright weather, followed by a much higher temp., heavy rains, and high wind.

XIX. *Watten.* A month of unusual severity; very changeable and unsettled, with strong gales.

XX. *Tipperary, Henry Street.* First half of the month fine, second half wet and stormy.—*Castle Lough.* The first few days were fine, but the latter part was wet and very stormy, but not cold; a few frosty days about the 18th.—*Miltown Malbay.* A very cold, wet, and tempestuous month.

XXIII. *Newtownards.* First dry and fine; frosty from 15th to 22nd, remainder of month wet and stormy.—*New Barnsley.* Very fine till 7th, then showery till 15th; keen frost from 18th to 21st, and the remainder of the month stormy.—*Killygarvan Glebe.* A wet month, with a good deal of wind, and one very violent storm on the night of the 25th and morning of the 26th; a few nights of sharp frost.

DECEMBER.

I. *Muswell Hill.* The first 12 days of the month were very fine and mild, but after the 12th only two days were absolutely free from R, and the total fall was nearly 1 in. above the average of eight years.

II. *Abinger Hall*. On the whole a good month, work of all kinds was carried on without any break.—*Croydon, Addiscombe*. This, the first of the winter months, although another most changeable month, may be, on the whole, described as having been very mild, wet, and dull, with an exceptionally windy atmosphere of average humidity. It was remarkable for its great freedom from fog, for the frequent and heavy rains of the last 19 days, and more especially for the extremely variable character of its weather generally.—*Hythe*. Early part of the month cloudy and fine, latter part wet and squally.—*Littlehampton*. Very fine and mild at the beginning of the month, birds singing as though it were spring, and a thrush's nest was found with two eggs in it. Roses, violets, veronicas, &c., all in bloom throughout the month.—*St. Leonards*. A cloudy and rainy month with temp. about 3° above the average.—*St. Laurence*. Lovely weather till 14th, after that incessant R.—*Southampton, Woolston Lodge*. Very mild most of month, six nights below 32° ; extraordinary high barometer from 3rd to 10th, followed by a great deal of R. Max. temp. 54° ; min. $26^{\circ}\cdot3$.

III. *Datchworth*. First half remarkably mild and fine, then sudden and great changes of temperature, with frequent R and S to the end of the month.—*Buntingford, Throcking Rect.* A mild month, with frequent R during the latter half. A few flakes of S on 17th, S on 19th, 20th, 26th and 30th, when an inch and a half fell, remaining on the ground. Primroses in bloom in neighbouring wood a few days before Christmas.—*Addington*. A mild month, but very unsettled after the 13th.—*Cambridge*. Fine and dry weather prevailed during the first 12 days of the month, then frequent heavy R.

IV. *Rendlesham Hall*. Dull, mild, wet weather, with strong winds; only one slight fall of S, and very little frost.—*Diss*. A very fine month, with but little wintry weather; S fell on four occasions.

V. *Compton Bassett*. The weather during the first 12 days was fine and open; from 13th to end rough and stormy, with several sharp frosts.—*Langton Herring*. The temperature for the first 16 days was very equable, the range being only 17° , and on the whole the temp. was higher than in any December of the last eight.—*Babbacombe*. A mild, damp and gloomy month. The rainfall, which almost all fell after the 14th, was slightly above the average. Temp. was much above the average, but was very variable in the latter half. The bar. was high and the weather dry and dull till the 14th;

and from the 15th to the 30th it was low, with wet and stormy weather. W.S.W. winds were prevalent, and blew with the force of a gale on several occasions. Fog on five days.—*Bodmin, Fore Street*. A very mild and wet December.—*Crewkerne, Lincombe Ho.* The beginning mild and dry, with high bar. readings; stormy at the end.

VI. *Cheltenham*. A very damp month, temp. above the average. Very slight snowfalls occurred especially towards the end of the month, but the ground was never covered.—*Ross, The Graig*. First half of month very dry, fine, and warm; latter half very wet, with just a sprinkle of S on morning of 27th.

VII. *Loughborough*. A wet month; 21 rainy days; total fall, 2·94 in.—*Coston Rect.* A foggy month on the whole, with occasional bright days, frequent gales and storms at night.—*Strelley Hall*. Unsettled weather; up to the 13th very warm for the time of year. Mean temp. 39°·9.—*Worksope, Hodsock Priory*. The first fortnight was warm and dry; during the rest of the month there were frequent alternations of frost and thaw, with a good deal of R and S.

VIII. *Walton-on-the-Hill*. A very mild month, with an exceptionally heavy rainfall for the time of year.

IX. *Scarborough*. The month was mild, with little frost or S, the mean temp. being 2°·1 above the average; rainfall rather below the average.

X. *Whorlton*. Very mild at the beginning of the month; high winds and variable weather in the middle; very cold, with S and frost at the end.—*Measandbecks*. Beginning and middle of month rainy; heavy S in latter part.—*Shap, Copy Hill*. A very unusual amount of S.

XI. *Llanfrechfa Grange*. The whole month very mild and fine, and free from fog.—*Llandoverly*. The weather was so mild a fortnight before Christmas, that a full-grown mushroom, with pink flesh, was found near Llandingat.—*Castle Malgwyn*. Very cloudy weather throughout the month.—*Rhyl, Sedgley Ho.* Very wet, but no fogs; a great quantity of wind.—*Menaifron*. R measured on 25 days; temp. most variable, ranging from 51° to 33°; breezes light.

XII. *Crichton Inst.* The first part of the month was mild, breezy, and showery, but the middle and latter part cold, windy, and variable. S fell frequently, but not to any great depth. Sleety squalls were also frequent, but the wind was never above medium force. Mean temp. and pressure about the average; rainfall below it.—*Melrose*,

Abbey Gate. High temp. during the first half of the month, with a good deal of strong wind from W ; the latter half cold, with a good deal of S and sleet ; rainfall about the average ; mean temp. 2° above average.

XVIII. *Loch Broom.* A very stormy month ; from the 8th to the end one almost continuous storm of H, R, S and sleet, with occasional T and L.—*Glenfinnan.* Beginning of month very wet and stormy, with a high temperature ; remainder very cold, snowy and frosty, but calm.

XIX. *Watten.* The month was remarkably stormy, with heavy S and floods, and intense frost towards the end.

XX. *Tipperary, Henry Street.* First half of the month very mild ; in the second half some S and frost.—*Miltown Malbay.* The first half of the month was rainy and very mild, but frost set in on the 16th, followed by a bitter storm from N.W., lasting two days ; and the remainder of the month was variable with S, H, sleet and R.

XXIII. *Newtownards.* Month characterized by great variation in temp., but on the whole mild.—*New Barnsley.* A very changeable month, R, S, H and frost succeeding each other, and lasting for a short time only.—*Killygarvan Glebe.* A rather stormy and changeable month ; rainfall not much above the average, but the number of days was considerable. Mean temp. 2° below the average.—*Buncrana.* Severe weather and low temp.

OBSERVERS' NOTES ON THE YEAR 1880.

ENGLAND.

DIVISION I.—MIDDLESEX.

ISLEWORTH, SPRING GROVE.—The year began with mild weather, changing to frost, and it remained cold and dry to end of January; fogs prevailing, with some bright days, and 26 days of frost. In February temp. increased, with rainy weather, succeeded by moderate and seasonable weather in March. A slight increase of temp. in April, with unsettled and rainy weather. Spring promising; dry weather in May, with great variations of temp. (82° on the 26th); five nights frost. June, a period of variable temp., two nights frost, excess of R, and unsettled, becoming more seasonable towards the end. Spring remarkable for luxuriant crops in the vegetable garden, and little promise of fruits. TSS prevalent all the season. Summer commenced in July with rainy weather, with intervals of bright days; then succeeded a period of drought, with prevalence of haze and mist, continuing to the middle of September, when a heavy rainfall succeeded, followed by fine weather. Some very close hot weather during this period; highest temp. 84° on 4th September. Autumn commenced in October, which was a cold rainy month, with a severe S storm on the 20th. November unsettled and rainy, varying temp., 14 nights of frost. December unsettled and variable; some bright fine days. The first quarter was, as a whole, seasonable; the second quarter unfavourable; the third quarter partly favourable, and the last quarter unfavourable.

ISLEWORTH, DUNSTER LODGE.—Rainfall excessive for this district.

MUSWELL HILL.—The rainfall in the year 1880 was remarkably near the average of the preceding eight years. The months of June, July, September, October and December, all had a rainfall in excess of the average, whilst January, March, May and August had a considerable deficiency. The number of days on which R fell was small, 25 below the average of the previous eight years, and actually less than any year in that time, less even than in 1874, when only

21·22 in. fell, distributed over 176 days. In the year just past, the four driest months had only 28 wet days in the aggregate. There were three falls of over an inch in 24 hours.

PINNER HILL.—Few TSS, and less days with R than last year ; temp. warmer ; bar. unsteady in October and November.

DIVISION II.—SOUTH-EASTERN COUNTIES.

CRANLEIGH, ALDERBROOK.—Some months very dry, others exceptionally wet, making the total fall above the average. Quite an exceptionally heavy fall of S in October, doing an immense amount of damage to trees, then in full leaf.

ABINGER HALL.—Very cold and dry up to June, which month was very showery and growing ; July very wet and cold. S and rough weather at end of October ; some favourable weather afterwards.

CROYDON, TANFIELD LODGE.—The rainfall during the year was 1·96 in. above the 20 years' average.

TENTERDEN, SUMMERHILL.—A fine year generally speaking ; March and May extremely dry and cold. No great heat during the year ; latter months of the year very mild and damp. October a remarkable month, for on three occasions over 1 in. of R fell in 24 hours.

BENENDEN.—Soil at the beginning of the year in a remarkably fine pulverised condition from the long and severe, but dry frosts of December and January. A showery April gave seeds and vegetation a good start, which was checked by a cold dry May. Many seeds did not germinate till June, but unfortunately the wet June caused the weeds to grow, and destroyed the promise of a favourable agricultural year. Fine harvest weather in August, but wet weather in October and November prevented corn sowing. May and August being dry, made the year better than 1879, and the June and July R was more from storms than constant wet ; but the wet October and November contrast most unfavourably with the dry October, November and December of 1879.

TENTERDEN.—Very dry January, but a great deal of dew and fog ; six days in January and four in February on which ·01 in. of dew or fog was collected. Very little S ; 22 night frosts in January, and on 29th temp. fell to 15°. Bar. very high all through the month. February wet. No rain from March 8th to 30th, and 22 days E.

winds. First part of April showery, latter part dry ; severe storm on 15th, roads damaged by rush of water. Exceedingly dry May, wind mostly N. and E., high wind on 17th, and again from W. on 24th ; two storms on 28th, and a little H. June and July wet, with a number of TSS ; especially severe on June 24th, when much damage was done. Another violent storm on August 2nd, when several trees were struck. From August 7th fine and dry weather to September 4th, with the exception of a storm on night of August 24th. First four days of September very hot, 79° in shade on 4th being the hottest weather of the summer, although the shade temp. was equalled on July 15th, 16th and 17th. R and storms in middle of September ; last ten days dry. October very wet, except from 13th to 18th. Middle of November very wet, causing more floods ; S and R on 18th and 19th, .28 in. of S, with rising bar. on 20th.

GOWDHURST VICARAGE.—Remarkably dry long frost at beginning of year, and an early spring, but the remainder of the year was wet. S in October. Not much fruit and no flavour in any ; pears rotted rapidly in keeping-room ; wonderful growth of greenstuff in every garden ; frequent floods in valley.

SELLING, GOSMERE.—The year was remarkable for the extreme dryness of January, March and May.

RAMSGATE, THE VALE.—The remarkably dry weather for the last three months of 1879 continued during the first five of 1880. The rainfall of October was exceptionally heavy, the quantity being greater than in any other month during the last seven years, and more than three and a-half times the average during the same period. The max. temp. of the year was in August, 82°·2, and the min. 19°·8 in January, a cold very rarely experienced in Ramsgate.

BECKENHAM, FOXGROVE.—January, March, May and August were very dry. R to 31st May, only 5·46 in. ; R to 30th June, only 7·96 in. January 18th to 31st, fog and hard frost. July almost daily T and L or L. October R and S, 7·17 in., the heaviest yet registered here. Early and destructive S storm on October 20th, and heavy falls on October 6th, 9th, 20th, 22nd and 26th.

ELTHAM GREEN.—No measurable amount of R fell between January 17th and February 4th, 19 days ; March 9th and 30th, 22 days ; May 6th and 26th, 21 days ; August 9th and 23rd, 15 days.

WORTHING, BEDFORD ROW.—The year was remarkable for the large number of heavy falls of R ; five falls of over 1·00 in., in 24 hours, occurring in the second half of the year. October was very wet.

CHILGROVE.—A wet and dull spring.

MIDHURST, LYNCH FARM.—The following features in the weather of the year appear worthy of notice :—The extraordinary dryness of January and May ; the prevalence of cold E. and N. winds during the latter month ; the general preponderance of cold N. winds from New year to Midsummer ; the dryness of the harvest month, during which only .91 in. of R fell ; the earliness of the heavy S storm of October 20th ; the general severity of the weather at the latter end of October and early part of November ; and lastly, the very heavy rainfall during the last four months of the year, amounting to 22.46 in. The total (39.82 in.) is considerably above the average, and therefore unfavourable to agriculture, though somewhat compensated for by the dry spring and harvest month.

WEST BRIGHTON.—Total rainfall above the average. Remarkably small rainfall during the first eight months (only 12.25 in.), and exceedingly heavy fall in the last four months (19.58 in.), five falls of over 1 in. in 24 hours. Splendid weather for harvest, and the finest crop of potatoes for very many years ; altogether a great improvement on 1879.

LEWES, IFORD.—The first five months were dry and cold, June showery, July wet ; August very fine for the harvest, and the four last months very wet, particularly October, which is in the S. reckoned upon as a fine month.

MARESFIELD, FOREST LODGE.—The rainfall during 1880 was 33.43 in., which is 1.70 in. in excess of the average (31.73 in.) of the previous 24 years. There were 186 days (223 in 1879, 192 in 1878, 215 in 1877, and 201 in 1876), on which .01 in. or upwards was found in my gauge. January and May were abnormally dry, but the average was more than made up by the heavy R in October and at the end of the year. On October 10th 1.88 in. fell, the largest quantity I can find among all my records ; 1.14 in. fell on the 26th of the same month, and 1.15 in. on September 14th. I seek in vain, through my 25 years' register of rainfall, for anything in the shape of cyclical variation. R appears to descend both in great excess and defect of the average, without the slightest reference to any fixed period of years whatever.

CROWBOROUGH BEACON OBSERVATORY.—Rainfall nearly 3 in. below the average of the last 10 years.

BALCOMB PLACE.—Severe frost during nearly the whole of January, ice 7 in. thick. Birds' nests were found here on the 6th of March.

The cuckoo and nightingale were much later than usual. May was fine and very cold. Haying commenced about the 1st of July. Harvest commenced on the 14th of August, and had splendid weather.

NEWPORT, ISLE OF WIGHT.—Rainfall above the mean.

CHRISTCHURCH, MUDEFORD.—The year was remarkable for the prevalence of E. winds and the quantity of R from that quarter ; out of 170 days rainfall, 61 were with an E. wind. S fell on night of October 19th–20th, ground covered about 1 in. deep ; R set in and washed it away. I have not had S in October since 1869. The total rainfall is 3·29 in. above the average of the previous 11 years.

MICHAELMERSH RECT.—The rainfall for 1880 is 1·86 in. less than the average of the last five years. The number of wet days is five above the average.

PETERSFIELD.—The rainfall was 6·5 in. more than in 1878, but fell on 131 days only, instead of 158 ; it was only 5·84 in. less than in 1879, when it fell on 170 days. The fall of 2·20 in. on Sept. 14th was the heaviest fall in one day during the last three years.

OVINGTON.—Throughout the year more T than usual.

ALRESFORD, ARLE BURY.—Dry, cold spring following very severe winter. Indifferent fruit year, and harvest not much better than 1879 as regards yield. Autumn very mild. Primroses abundant at Christmas.

MICHELDEVER.—The spring was favourable generally for agriculture ; the heavy rainfall of July, however, spoiled the good prospect of crops. In September the chalk springs were very low, whereas the previous year (1879), at that time, they were very high. After October they rapidly rose again.

BLACKWATER, HURSTLEIGH.—The first half of the year was unusually dry, the amount of R being only 9·07 in., or less than half the quantity which fell in the same time last year (18·99 in.) In February and June the rainfall was a little over the average of the last four years ; in the other four months it was below it. The last half of the year was very wet, 22·53 in. being the amount ; 13·50 in. having fallen in the same time last year. The rainfall in August and November was below the average ; in the other four months it was above it. The most remarkable fall was in September, from 11th to 15th inclusive, a total of 4·87 in. in five consecutive days. There were four days in the year when more than an inch fell.

STRATHFIELDSAYE.—The most noticeable feature of the year was

the small amount of R for the first four months, and the very heavy rainfall in July, September and October. From September 10th to 20th I registered 4·60 in.

NEWBURY.—Pleasant and fairly seasonable weather generally.

PURLEY.—January was dry, but February abnormally wet. March dry, but May harsh and bleak. Temp. in August most genial, and also in September up to the 12th; October mild and wet up to 13th; December weather lovely for the month.

EAST ILSLEY.—The year was remarkable for the small rainfall in some months and the large quantities which fell in others, especially July and October; the excessive amount in July was caused by the very heavy T showers which visited this neighbourhood.

COOKHAM VICARAGE.—Mean max. $60^{\circ}\cdot2$; mean min. $41^{\circ}\cdot0$; mean temp. $50^{\circ}\cdot6$. Mean bar. 29·94 in.; greatest heat 92° Sept. 4th; greatest cold 14° January 20th.

LONG WITTENHAM.—A year of extremes. January, March, May and August were far drier than the average. June, July, September and October much wetter than the average. I never before registered so many heavy falls of R for the 24 hours—six times over an inch. This year has the largest total rainfall since 1852.

DIVISION III.—SOUTH MIDLAND COUNTIES.

BERKHAMPSTEAD.—The sixth successive year in which the rainfall has considerably exceeded the average, but there were not so many wet days as usual.

DATCHWORTH RECTORY.—The total rainfall is probably much above the average, and the fall in the first half year was less than half that in the last half. The year was remarkable for the alternation of very dry and very wet periods, and also for adding another to the series of wet cold summers. Remarkable dry periods, January 1st to February 4th, 35 days, fall ·26 in., and the last 19 days without R. March 4th to 30th, 27 days, with only ·05 in. on the 7th. April 29th to May 30th, 32 days with ·31 in. August 9th to September 10th, 33 days, with ·10 in. November 27th to December 12th, 16 days, with ·03 in. Wet periods—July 25th to 30th, six days, 2·17 in. September 11th to 15th, five days, with 3·47 in. October 2nd to 5th, four days, with 2·09 in. October 26th to 28th, three days, with 1·64 in.; and September 11th to October 9th, 29 days, with 6·56 in.

HITCHEN.—We have now completed six years of abnormal rainfall and low temp., for, whereas the average rainfall of 30 years is 24·06 in., of the last six it is 29·16 in., the average temp. of 30 years 47°·1, of the last six 45°·6.

SLOUGH, LANGLEY.—Rainfall 5·51 in. above average of previous eight years, five falls over an inch in 24 hours; only 6·47 in. fell in the first five months, and 25·09 in. in the last seven months.

SLOUGH, UPTON.—Owing to the great rains of July, September and October, the total fall for the year is above the average by some inches.

ADDINGTON.—The year began very well, but the excessive rainfall of July, September and October injured the crops very much, and a great quantity of hay was carried away by floods. Harvest very tedious, and a bad time for getting the winter-sown wheat in; altogether an unfavourable year. Rainfall nearly 4 in. above the average of 10 years.

STONOR PARK.—On the whole a favourable year, very wet, but warm with it.

OXFORD, MAGDALEN COL.—A mild open autumn and winter; swallows still here on November 25th; house flies also abundant during the first week of December.

BANBURY, BLOXHAM GROVE.—A most disastrous year as regards the harvest, both of hay and corn; the injury chiefly caused by the heavy rains and floods in July and September.

BANBURY, WROXTON.—A wetter year than any of the four preceding ones, but the wet days were fewer; frequent TSS. A more favourable year than 1879, owing to the dry May and five fine weeks in August and September, which, however, were barely sufficient to ripen and secure the crops.

HARGRAVE.—The excessive rainfall during June and July was most injurious to the wheat and barley crops upon all clay soils, producing blight to the corn, and promoting the growth of weeds. The harvest was very late, more especially on the clay soils, and immense damage was done to the unthatched stacks by the R., between the 11th and 16th of September. All corn in the fields was more or less damaged after that date.

WISTOW.—S fell only on three days in the year, and that but slightly.

ASPLEY GUISE.—Many wet days in June; an especially wet and cloudy July. The max. rainfall 2·21 in. on 14th July, only exceeded

twice since 1856, viz., 20th October, 1857, 2·30 in., and 22nd July, 1859, 2·67 in.; two falls exceeding 1 in. in September, viz., 1·09 in. on 11th, and 1·40 in. on 15th.

BEDFORD.—Good spring-time for sowing, but cold; July very wet, but a dry and warm August filled and ripened the crops well. Great damage to unthatched stacks by the rains of September 11th and following days. Good autumn for wheat sowing.

MILTON ERNEST.—Nine floods on the River Ouse during the year.

GRANCHESTER MILL.—The mill was stopped 23 days during the year by floods.

CAMBRIDGE, MERTON VILLA.—The drought which prevailed in January, March and May, was followed by very wet weather, which continued to the end of the year (August only excepted). The rainfall of January was less than one per cent. of yearly total, whereas that of October was nearly 22 per cent. of the same, producing destructive floods.

MARCH.—The year's rainfall was 5·50 in. above the average of the previous seven years.

ELM, COLDHAM HALL.—Wet, and bad agriculturally. July a fearful month; ruined a fine prospect. The autumn also was wet and unfavourable. The land at the end of the year excessively wet, indeed, completely waterlogged.

WISBEACH, BANK HOUSE.—The greatest annual rainfall excepting 1872 (38·43 in.), registered by me since commencing in 1859.

DIVISION IV.—EASTERN COUNTIES.

DUNMOW, HIGH RODING.—Rainfall ·50 in. below the average of 15 years.

BOXFORD.—Remarkable for dry January and May; for very heavy rains September 11th to 15th, and October 4th to 11th; great depression of barometer October 15th and 16th and heavy storms about the country, but wind and R here not especially high and heavy. Number of days on which R fell very small. Total rainfall slightly below the average of 10 years.

RENDLESHAM HALL.—Much E. wind and a marked absence of S.W.; last months of year very mild, no S and hardly any frost.

ASHBOCKING.—The early months of the year were dry and the autumn was damp, but it was healthy all the year. July R spoilt a promising wheat crop in blossom, washing off the bloom and being

followed by a good deal of blight. Several heavy tempests during the year (nine in all).

DRINKSTONE PARK.—In this neighbourhood we escaped in a remarkable degree the TSS of summer and the floods of autumn and winter.

BURY ST. EDMUNDS.—In January, the smallest rainfall (·10 in.) that I remember for that or any other month. T and L frequent in July and September, with heavy R.

WALSHAM-LE-WILLOWS.—The first five months of the year were remarkably dry, but the rainfall for the year is much above the average.

STRADBROKE.—Weather all that could be desired until the end of May, but from that time to the end of the year almost continuous wet, excepting a fortnight at harvest time. A fair barley crop, poor yield of wheat and peas, good crop of beans, and an extraordinary one of roots.

DISS.—The year began with dry pleasant weather, and the spring months promised well ; but the early summer was very wet, and the fine hay crop much spoiled. The harvest weather was brilliant, and some very heavy crops of barley and fair ones of wheat were secured ; a good deal of both, however, was injured by blight and mildew. In November there were some sharp frosts, which seemed to promise an early winter, but it soon became warm and pleasant again, and the close of the year was more like agreeable October weather than that of December. Christmas-day was bright and frosty. It was a decidedly healthy year.

GELDESTON RECT.—The early part of the year was fine and favourable for seed-time. June and July were very wet and injurious, August was dull but dry, and the harvest on the whole favourable, but the yield below the average. The autumn was very fine.

WEST DEREHAM.—The worst year for a long period ; the wet June and July following a cold, damp spring, prevented the corn coming to perfection, besides beating it down.

PICKENHAM HALL.—T was heard on six days in April, six days in June, 17 days in July, six days in August, and three days in September.

MATTISHALL.—First four months dry, July and first part of October very wet. Flowers in blossom much earlier than in 1879, but checked by the cold of May.

EAST DEREHAM.—The rainfall of the year is again in excess,

though in January and in May but little R fell. The seasons on the whole were an improvement on those of 1879, and in the autumn we had a good deal of pleasant weather.

FELTHORPE.—Protracted and severe frost from January 12th to February 5th ; very cold N. and N.E. wind from May 1st to 19th ; severe TSS in July ; first fall of S on November 21st.

HILLINGTON HALL.—Very wet and cold, and a great absence of solar heat, all kinds of vegetation showing marks of weakness.

DIVISION V.—SOUTH-WESTERN COUNTIES.

STEEPLE ASHTON.—The year, though not quite so wet as 1879, had a rainfall above the average, and at the end the land was saturated.

COMPTON BASSETT.—The beginning of 1880 was cold and stormy, and the spring long, dull and wet ; the summer months were cool and cloudy, with occasional hot days ; the autumn was fine and open, and highly favourable for field operations.

LANGTON HERRING.—The dry spring was favourable to the grain crops, which yielded well. Such an abundant crop of potatoes was never before known in the neighbourhood.

WEYMOUTH, OSMINGTON LODGE.—Rainfall very nearly 1·00 in. below the average of 14 years.

WIMBORNE, CHALBURY.—The rainfall of the year was 1·64 in. below the average of 15 years ; 9·89 in. fell in the first half of the year, and 20·68 in. in the second half. In the 12 months ending October 1st, 1880, only 20·47 in. fell.

PLYMOUTH, NAVIGATION SCHOOL.—Rainfall about 22 per cent. below the average of 16 years ; number of rainy days also below the mean. July, October and December had rainfalls above the average ; all the other months below ; January and August were exceptionally dry months, not one-fifth of the average falling in either of them. We had a great number of days when wind blew from the N.E. quadrant, but the mean temp. for the year was about the average.

BERE FERRERS.—The year was the driest of the past five, and 8 in. less R fell than in 1878. There was an entire absence of TSS in this locality, and only twice or thrice any storm at all near. In February and November there were very considerable variations of temp.

LAMORNA, TORQUAY.—On comparing the year 1880 with the 16

years immediately preceding it, the following noteworthy features are exhibited:—The January and August rainfalls were the least that have occurred during the same months, and the same remark applies to the number of wet days in those months. No previous rainfall in 24 hours equalled the 2·17 in. which fell on October 4th. The total rainfall was 7 per cent. below the average, and the number of wet days was also 7 per cent. below the average.

BABBACOMBE.—Rainfall slightly below the average, temp. and pressure about the average. May and August were very fine and dry, with persistent N.E. winds. October was very wet, and the extraordinary fall of 2·44 in. on the 4th was the greatest daily fall observed in this locality for at least 17 years; S fell on 11 days only. The mean temp. of the year was 50°·2; max. 76°·6 on August 31st, min. 21°·9 on January 28th. Frost occurred in air on 27 days, and on grass on 107, the latest in spring being on June 12th, and the earliest in autumn on October 3rd. January, June and October had mean temps. considerably below the average, and August and December considerably above. N.E. winds were above the average; gales blew on 46 days, S.W. gales being frequent in February and November, and N.E. gales in October. First part of summer cold and showery; latter part fine and warm.

EAST BUDLEIGH.—The weather was seasonable throughout, and abundant crops, and surprising yields were the result. Fears of drought were great at times, but the rains of May 26th and 27th, and June 18th relieved them. Springs lower at the beginning of December than I ever knew them before, but they broke just at the close of the year.

SIDMOUTH.—Total rainfall below the average.

BRAMPFORD SPEKE.—Rainfall just the average of 15 years; wet days below average. January only one-quarter of average fall, May one-half, August one-half, and November two-thirds of the same. July double the average and October one-fourth above it. Few hot days, or flies, or swallows; wasps very numerous; little wall fruit except plums; hay harvest bad; late corn good; much wheat thrashed unricked. Severe frosts and S in October, very little afterwards; only six days in December, with temp. at or below 32°.

CLAWTON, COURT BARN.—The largest fall I recollect in 24 hours occurred on 4th of October (2·41 in.) A bad hay harvest; good corn harvest; roots of all kinds abundant; a good plum year; other wall fruits moderate; small fruit abundant; pears rather scarce; apples great failure; wasps very numerous.

GITTISHAM.—A favourable year upon the whole for agricultural operations—a decided improvement on 1879.

TORRINGTON, LITTLE SILVER.—The heavy rainfall of July had a very bad effect upon the yield of the crops.

SOUTH MOLTON.—The greatest amount of R fell in the month of December (7·89 in.) ; smallest amount of R in January. The largest amount registered in any one day was 2·40 in. on 4th of October, the greatest part of which fell during two hours from 12 to 2 p.m. during a very violent HS, when hail stones ($1\frac{1}{2}$ in. in length and $\frac{1}{2}$ in. diameter of conical form) were picked up.

PENELICK, PAR STATION.—The driest summer we have had for some years past.

MAKER VIC.—The driest year since 1870, but only January and August very dry. October and December rather wet.

EMPACOMBE.—Agriculturally a favourable year. Cereals an average ; root crops above average ; grass moderate.

ALTARNUN VICARAGE.—The driest year since 1870 (when 47 in. fell), and about 9 in. below the 16 years average. Corn crops splendid in N. Devon and E. Cornwall—the best known. January the driest on record ; March about half the average R ; May about one-third of the average ; August the driest on record and the warmest since 1871 ; water very scarce in places at end of month. September brought the hottest weather of the year ; mean max. 1st to 5th, $88^{\circ}\cdot5$. October, damaging floods about 5th and 6th ; bridges washed away.

WEEK ST. MARY.—First half year very dry, second half year wet. Hay harvest badly saved, corn harvest well saved. Few birds.

CREWKERNE, BINCOMBE HOUSE.—Rainfall of the year 2·60 in. below the average.

WHITE LACKINGTON.—Less R than the average of the last three years by nearly 3 in., and on far fewer days.

FITZHEAD.—A long dry period of hard frost during the latter part of January. March, April, and May were fine dry months, very good for farming operations ; the R at the end of May coming just when it was wanted. Some heavy T showers during July ; August was very dry and fine, but dull and without much sun ; a very sudden fall of temp. occurred about September 12th ; a slight fall of S occurred on October 20th, and on the 21st a sharp frost, both of which are early ; and from the 25th to the 28th very heavy R fell, causing great floods.

EXFORD.—The months of January, May and August were remarkably dry. Twice in October a fall of more than 2·30 in. in 24 hours was registered. On the latter of those occasions the river Exe rose to a greater height than had been known for at least 12 years.

DIVISION VI.—WEST MIDLAND COUNTIES.

CLIFTON, SOUTH PARADE.—1880 has been the seventh consecutive year of excessive rainfall.

FAIRFORD, KEMPSFORD.—All the R in June, July, and August fell in storms accompanied mostly by T and L.

SAUL LODGE.—The annual average rainfall of the 10 years ending 1870 was 24·63 in., that of the 10 years ending 1880 is 31·47 in., or very nearly 28 per cent. increase.

NEWNHAM-ON-SEVERN.—A fairly dry spring and a late summer; more sunshine than for several years; low temp. until August.

BRYNGWYN.—Wind very frequently from the E. until December. R fell heavily for a few days together, and then weather was fine for several days. Number of wet days much less than usual. Temp. higher than in 1879.

WHITFIELD.—Dry spring, dripping summer, very fine autumn, open winter.

LEDBURY, WEST BANK.—The first four months seasonable and mild; March particularly sunny; May cold and everything backward; no grass on June 1st; June and July cold and wet; bad hay harvest; wheat fairly got in; good crop of roots.

HEREFORD, RICHMOND PLACE.—A year like the preceding one, devoid of much sunshine. The mean bar. reading for the whole year was 29·861 in., and the mean temp. for the same period 48°·5. There were several floods in the river Wye, the one which occurred on the 28th of October being particularly high; the gauge at the bridge registered about 16 ft., which I understand is the highest on this river since 1852, when it rose to 22 ft.

BISHOP'S CASTLE.—Excepting July and October; which were very wet, the year was much more seasonable than its predecessor. Grain crops about an average and harvested in good condition. No great extremes of temp. or rainfall during the year.

MORE RECT.—A year of remarkable contrasts. A very severe January and singularly mild and fine December. R fell on only

four days in August, and October was very wet. A total absence of winter birds and of holly berries.

PREEN MANOR.—Bad hay and corn crops ; much hay was damaged owing to June and July being so wet. There was no really hot weather to ripen the corn crops, which consequently were not ready to be gathered till October, when, owing to the continual R, they got spoilt in many instances.

SHREWSBURY, FITZ MANOR.—Something like the two last years, fearfully wet, though no great quantity of water fell, but warmer than the last two years ; the sun really was seen *sometimes*.

TAMWORTH.—A very disastrous year ; the bulk of the R fell during hay and corn harvest, for, owing to the want of sunshine, October was the month in which the corn was ready for carting in the Midlands, but a great deal was out in November. All the hay was either spoiled by R or washed away by floods ; harvest better than 1879, but still 20 per cent. below an average.

ALREWAS, THE COTTAGE.—Many floods on the river Trent.

SHUSHIONS MANOR.—Rainfall for year slightly below the average.

BURTON-ON-TRENT GRAMMAR SCHOOL.—The first five months and August were very dry ; July, October and December very wet. A remarkably severe and early visitation of frost in October and the early part of November. After November 24th very little frost for a month. Frequent S during latter part of December ; that on morning of 27th 3 to 5 ins. deep—the deepest of the year.

BURTON-ON-TRENT, SHOBNALL.—The total fall is in excess of those of the last two years. S fell on eight days during the year, but very slightly ; max. depth 4 in. The heavy R in the month of July proved very destructive to the corn crops in this county, and the amount of sunshine was very small.

TEAN VICARAGE.—Another year of excessive rainfall and deficient temperature. The fall on August 7th (2·18 in.) is the largest amount recorded in 24 hours since observations were commenced here in 1874 ; it was followed by a period of 19 rainless days, but the weather during the greater part of the period was very dull, and certainly not as a *Times* leader asserted, “The hottest August on record.”

CHEADLE, OAKAMoor.—Very dry January ; dry periods again from March 4th to 30th, and generally from April 21st to May 9th. Wet period from July 2nd to August 8th ; dry thenceforth to August 26th. The fall of August 7th did considerable damage, and

a quantity of ungathered hay was swept away by the torrents flooding the Churnet valley.

EVESHAM.—Generally speaking a fine seasonable year, all that could be desired for agriculture. Rainfall (30·50 in.) is about 12 per cent. in excess of the 14 years mean (27·40 in.) The months of February, June, July, September, October, November, and December were each in excess of the mean of 14 years. January, March, April, May and August were all below it.

GREAT MALVERN, HORNYOLD TERRACE.—The total rainfall for 1879 was exactly the same as 1878, each being 34·22 in. ; and that for 1880 differs from these only by 0·35 in.

RUGBY.—The average rainfall at Rugby is 23 in., so that the fall of 1880 (36·68 in.) is more than 13½ in. above it. The only years since 1865 with anything like such a fall were 1875 with 35·78 in., and 1872 with 36·25 in. I can find no record of so wet a September as that of last year.

COVENTRY.—The weather was dry and favourable up to the end of June. July brought continuous R, spoiling the hay harvest and damaging the prospects for the corn. August dry, sunless, and gloomy. September brought a deluge of R. October still heavier fall (10·73 in. in the two months). Corn not well ripened ; fruit scarce.

DIVISION VII.—NORTH-MIDLAND COUNTIES.

BRUNTINGTHORPE REC.—The heaviest fall of R since the register was commenced in 1873.

ASHBY MAGNA.—The year was during the first six months full of promise for the farmers, but the terrible rains which began about the middle of July, disappointed all their hopes, and the crops in this neighbourhood proved very short. About 6 a.m. on the mornings of July 14th and 15th, heavy R fell, giving in the two storms, each lasting about two hours, 2·76 in. of R ; but the most violent storm, and heaviest fall was on the early morning of August 30th, when 1·72 in. fell in two hours.

KILBY.—Spring months very cold and dry ; summer, except August, peculiarly wet, cloudy, sunless and chilly. Many floods, one in the middle of July, being unprecedentedly large ; autumn very wet, early days in September unusually hot, November very cold, December mild.

BARKBY VIC.—Floods frequent during the year, and much illness in consequence. July 15th (St. Swithin's day), the brook rose 13 ft., causing much damage. Five weeks of fine weather in August and September. The year generally was cold.

SYSTON.—Total rainfall 5·61 in. above the average of twelve years.

LOUGHBOROUGH.—Total rainfall 32·75 in., 5·72 in. above the average, and 6·60 in. above that of 1879. Mean temp. 49°·7, 0°·5 above the average, and 4°·2 higher than in 1879.

LOUGHBOROUGH WATERWORKS.—June, July, September and October were unusually wet, causing enormous damage to ripened produce, both during hay and corn harvest.

COSTON.—Total rainfall the largest since observations were commenced in 1873, with exception of 1875; excess produced by heavy falls of June, July, September and October; other months, especially January and August, below the average. Mean temp. and mean bar. above the average.

BELVOIR CASTLE.—Leicestershire was visited during the summer months by an unprecedented rainfall, causing great loss to farmers in hay and corn, and producing floods which were disastrous in their effects, not only to low-lying land, but to towns and villages.

UPPINGHAM.—February and April were remarkable for a large number of rainy days without any heavy falls; June, July, September, October and November for heavy falls on three or four consecutive days.

KETTON HALL.—Several unusually heavy rainfalls, and consequent floods.

TOLETHORPE HALL.—The most disastrous year ever known in the Midlands. In July the greatest flood known at Stamford since the year 1640.

TYDD GOTE.—In consequence of the heavy fall of R in August, September and October, and the violence with which it fell, we are, in this district, very great sufferers. Many who succeeded in cutting and carting their grain well, had much of it spoiled in the stack, not having been able to get it thatched before the R came in torrents.

SPALDING, PODE HOLE.—Rainfall 13 in. above the average; damage to cropping most serious; standing corn beaten down in July and ruined by mildew and blight; corn on the lowest lands standing in water, while in the stook; carting impossible; wheat sowing followed by rotting seed on account of the land being so

thoroughly soddened. Such a fearful season has never been known here, especially following the terrible 1879.

BOSTON.—The rainfall for the year 1880 is the greatest upon record.

STUBTON.—The greatest rainfall measured here.

BLOXHOLM.—The heavy R in July was very disastrous to grain crops ; much corn was laid. The excessive fall of R in September and October caused great damage in this neighbourhood, over 1200 acres of fen land was flooded, in some parts 6 ft. deep—viz., Ruskington and Dorrington Fens. All the householders had to leave their homes, and will not be able to get back until next spring.

PARTNEY.—The months of January and May were remarkable for small rainfall, but during the summer months it was extremely large.

DODDINGTON.—More than two-thirds (20·06 in.) of the R fell in the last six months.

SKELLINGTHORPE.—The wettest year, and in an agricultural point of view the very worst for a long period.

LOUTH.—During the last six months four great floods occurred in the neighbourhood. Total rainfall (35·04 in.) is 4·63 in. above the average of the last 16 years. Mean temp. 47°·8 ; mean bar. 29·95 in., both within a very small fraction of the average for the last 16 years.

AYLESBY.—Rainfall 2 in. above that of any of the preceding eight years.

KILLINGHOLME.—The wettest year, with the exception of 1872, since I have kept a register. I never before registered four falls of more than inch of R in 24 hours during one year.

STRELLEY HALL.—The first five months were very dry. Total rainfall 7·51 in. Many TSS in June and July, bringing up the total fall in those two months to 10·62 in. These storms laid the corn, especially barley. The crops were bulky, but there was not a good yield of grain. Very few apples and pears, owing to last year's wood not having ripened. Many of the older apple trees died, probably in consequence of the wet season, followed by a severe winter last year. Not a nut or walnut to be seen. Thorns and hollies have borne no berries.

GEDING RECT.—The year an exceptional one as regards the rainfall, which is about 9 in. above the average.

OLLERTON, WHITEMOOR HOUSE.—A miserable year for agriculturists in the Midlands.

WORKSOP, HODSOCK PRIORY.—The year was an exceedingly wet one, especially during the latter part ; the first five months were dry, but during the last six the fall (24·5 in.) was almost equal to the average for the whole year. In spite of this the number of rainy days has been small, the large total being caused by the number of heavy falls (there being five above 1·00 in. in August, September, and October) ; these have caused very serious floods, especially as the R frequently lasted over several consecutive days ; thus 3·76 in. fell on four out of five consecutive days in September, 2·21 in. on two days early in October, and 3·43 in. in three days at the end of the same month. The estimated number of hours during which R fell was 687, giving a mean rate of 0·051 per hour, in 1879 the rate was 0·033. As regards vegetation, the spring was fairly early, there were good crops of strawberries, gooseberries, &c., but stone fruit, as well as apples and pears were very scarce. The corn was mostly cut by the end of August, and some farmers got nearly all in in good condition before the heavy rains in the middle of September ; what was out in these was very much damaged, and a good deal (especially on the limestone) was not gathered till late in October : the crops were fair, wheat and barley being best ; turnips were good. The farmers lost many sheep during the wet autumn. Light coloured flowers were much attacked in the summer by a small black insect ; slugs and caterpillars were very numerous.

TRENT COLLEGE.—Very little R till June. June and July very wet and cool, August dry and cool. September 3rd, max. 80° ; 4th, max. 84° ; the only two days on which shade temp. reached 80° during this cheerless summer.

SPONDON.—Remarkable for the unusual periods of large rainfall. A TS of great severity, and probably unequalled for 22 years, occurred on August 29-30th, from 10 p.m. of 29th to 5.15 a.m. of the 30th. The L was fearful, and about 2 a.m. the colour of an unusually yellow hue, at that time it was perfectly awful, the hissing just before the discharge being so strong as to alarm the strongest nerves.

BRIMINGTON HALL.—The total fall is above the average of 10 years ; the latter part of June and all July very wet, and large quantities of hay were utterly ruined. Fortunately there were many sunny and warm days to ripen the corn, but tenant farmers, as a rule, have been unable to realize any profit from the land.

DIVISION VIII.—NORTH-WESTERN COUNTIES.

PULFORD.—The year was chiefly characterised by the excessive rainfall in the last seven months, attended by disastrous floods in the neighbourhood of rivers, which have not been able to take off the sudden influx of water caused by the system of drainage.

CHELFORD, ASTLE HALL.—The first four months were dry, the remainder, excepting August, very wet.

NORTHWICH, WINNINGTON.—Total rainfall 3·20 in. above the average of 12 years; number of wet days considerably below the average.

HINDERTON.—Rainfall 9 per cent. above the average of the previous 18 years. In the seven wet months of the year the fall was 25·04 in., and in the 5 dry months it was 6·89 in.

FRODSHAM, FOX HILL.—A late cold spring; more than an average of heavy rains, early frosts and S in the autumn. An average harvest; about an average of rainfall.

BOWDON, ERLESDENE.—Rainfall ·40 in. below the average of ten years.

GARSTON, GRASSENDALE.—Although the rainfall was heavy, it was less spread over the year than in 1879 (1879 had 195 wet days, 1880 had 170). The R was generally heavy, but did not last long; a very wet day was frequently followed by a brilliant rainless one.

LIVERPOOL, WALTON-ON-THE-HILL.—First part of the year dry, latter part very wet. A very long dry period from the 8th to the 31st of August, the longest absolutely dry period on record at this station.

URMSTON, HIGHFIELD BANK.—The year was more remarkable for the heavy falls upon certain days, than for an excessive total fall, or the number of wet days, the fall on the 7th July, 2·01 in., being the largest amount yet recorded.

MANCHESTER, ARDWICK.—The total fall during the year was larger by several inches than that of 1879, but we had a better summer, and more sunshine.

BOLTON, THE FOLDS.—Total rainfall 3·87 in. below the mean of the previous 49 years.

BOLTON, BELMONT ROAD.—January was the driest and coldest month of the year, and September and December were the wettest. Very dry and warm weather prevailed throughout August, and good crops were gathered in this district. February, April and October were the stormiest months of the year.

ROCHDALE, DRAKE STREET.—The total fall was 1·25 in. below the average of 15 years. January was the driest month and July the wettest, thus almost reversing the proper order. January was the driest January during the 17 years over which the observations extend, and July the wettest July.

RUFFORD.—Rainfall 2·04 in. above the average of 10 years.

CHORLEY, CROOKE HALL.—Rainfall about the average, deficient during the first half of the year, but made up in the last four months. Severe frost in October ; crops on the whole good ; hay light, but generally well got ; oat crops particularly heavy ; potato crops good.

BLACKPOOL, SOUTH SHORE.—Rainfall nearly two inches above the average of the past 25 years.

ELSWICK LODGE.—Rainfall 6·48 in. below the average of previous eight years ; had there been only the normal fall in November and December, it would have been by far the least I ever recorded. The total from November 1st, 1879, to October 31st, 1880, was 26·52 in. or 13·04 in. below average. Temp. above average ; late spring ; good harvest time ; crops generally good and well secured.

LANCASTER, ESCOW BECK.—Rainfall 2 in. below the average.

BARROW-IN-FURNESS.—The average rainfall for the last eight years at this station is 37·08 in. The amount for 1880 (30·65 in.) is thus 6·43 in. below the average, and also the least fall since 1873, the total for which year was 30·14 in.

STORRS HALL.—A dry year ; rainfall about 4 in. less than the average, but large quantities fell in June and July, and again in November and December ; the rest of the year was very dry.

CARTMEL, HOLKER.—First half of the year very dry. Spring cold and unfavourable ; August a remarkably fine summer month, first week of September very hot.

GRANGE, PIT FARM.—Highest temp in shade 83° on August 14th, lowest 21°, on January 14th ; highest average monthly temp. in August, lowest in January. The average temp. of November and December was equal and was 5° above that of January. July, August, and September were all warmer than in 1879. Wheat crop was very little better than in 1879 ; all other crops (except wurzels) were good.

CARTMEL, BROUGHTON HALL.—Rainfall about 8 in. below average of last 11 years and only 0·86 in. more than 1879 ; first 6 months exceptionally dry ; January especially so.

DIVISION IX.—YORKSHIRE.

WATH-UPON-DEARNE.—The wettest year of the last 25 ; the third cold, wet, sunless summer in succession ; on 10 days upwards of 1 in. of R fell, and on September 15th the heaviest fall ever recorded here (3·18 in.)

HUDDERSFIELD, DALTON.—Rainfall 4·37 in. above the 15 years average ; five falls in 24 hours exceeding 1 in.

ALVERTHORPE HALL.—The year opened remarkably dry, and continued so till the 30th of March ; late frosts, and general absence of sunshine throughout the summer. The early bloom of the plum, pear and wall fruit trees was almost entirely destroyed, and the little fruit on the wall trees, from the want of sunshine, ripened with little or no flavour.

GOOLE, TILLAGE WORKS.—The year commenced with cold and stormy weather. The heavy rainfall during the latter end of June caused immense damage in this district to the wheat crop then in bloom, and the continuous R in July ruined the potato crop.

WAKEFIELD, STANLEY VICARAGE.—Rainfall 7·40 in. above average.

HALIFAX, THORPE.—Slightly above the average rainfall.

BRADFORD, FARCLIFF.—Although there was a much greater rainfall this year than in 1879, there was more sun and less cloud. The hay crop was heavy but not well got, on account of the July rains. Garden produce (fruit excepted) very good.

HORSFORTH, OLIVER HILL.—Wretched hay-time ; harvest-time precarious, but not so bad as the hay-time. Total rainfall 1·57 in. less than 1878 and 7·25 in. more than 1879.

OUGHTERSHAW HALL.—On the whole a favourable season ; remarkably dry during August and early part of September ; severe storm of wind and S on 26th of October, destroying many sheep, trees, &c. ; end of year mild and wet.

SEDBERGH, BRIG FLATTS.—The last two months of the year were remarkable for sudden changes in the weather.

SEDBERGH, THORN.—On the whole a pleasant moderate year. Very high E. wind on 28th October. Frost came early, killing all half-hardy plants on the morning of the 3rd of October.

PATRINGTON.—It was a very wet harvest, and the corn was much sprouted ; the yield proved very deficient.

HULL, BEVERLEY ROAD.—A very wet year, only exceeded once since 1858, viz., 1872, in which 36·51 in. fell.

HULL, DERRINGHAM.—The October rainfall is the greatest regis-

tered for that month since observations were commenced in August, 1849, and includes five R storms ; it is the max. monthly fall, except December, 1868, when 6·33 in. was registered, falling on 28 days. The max. ther. never reached 80° until September 3rd, which day, with its min. of 60° and max. of 84°·5, proved the warmest day of the year. The last frost in the spring was on the 1st May, 32° ; the first in the autumn, 20th October, 26°.

THIXENDALE.—A good deal of foggy, thick weather during the year. Daily average of cloud, 7. The highest temperature was reached on September 4th, 86° ; the lowest on November 21st, 7°. On 3 nights in June there was a slight frost, the latest on the 10th, 31°. Northern lights very brilliant on the 3rd November.

FOXHOLES.—The year opened fine and mild, and January was an exceptionally fine month, with frost towards the close. There was then nothing remarkable until July, and up to that time there was a fair prospect of a good harvest. But the heavy rains and continuous wet during that month did much damage, preventing the proper filling up of the wheat. August was a fine month, and seemed to be about to make certain that the wheat harvest, though little in quantity, would be fine in quality. But September and October prevented these hopes being realised.

OLD MALTON.—Rainfall 2·59 in. above average of 22 years. All grain crops very deficient from excessive wet in July, and much damaged by wet in September.

PORT MULGRAVE.—The heaviest rainfall recorded here.

DIVISION X.—NORTHERN COUNTIES.

DURHAM, USHAW.—The rainfall of 1880 was made up in fewer days than the much smaller quantity of 1879. July was distressingly wet for the harvest, while August was remarkably dry. The last four months of the year were all wet, especially September and October.

SEAHAM VICARAGE.—A fine year, the first half remarkably so, free from blight, and with a fair amount of sunshine. Only 8·95 in. of R fell in the first six months, and 4·07 in. fell in July, which was in a great measure thunderstorm rains. A somewhat heavy rainfall unfortunately caught the harvest in September.

SUNDERLAND, WEST HENDON HOUSE. This is the sixth consecutive wet year. In the first five months there was a deficiency of

nearly 2 in. from the average 1860–1879. The ground was never covered with snow during the early months of the year, a circumstance I do not remember occurring before. The greatest depth of S was $3\frac{1}{2}$ in. on October 20th, which is remarkably early. N.E. and W. winds have been in excess.

BINGFIELD HOUSE.—Dry spring, wet summer and autumn. Shrubs and evergreens much damaged by winter's frost. Crops of strawberries and bush fruits abundant. Apples and pears somewhat scarce. Very little blossom on hawthorn, and no berries.

BYRNES.—Upon the whole the year was very favourable for the locality—a hill farming district.

PAWSTON.—The rainfall on September 14th was the greatest I have ever registered in eight years, 2 in. falling between 10 p.m. and 9 a.m. The river Bowmont was larger on the 15th than it had been since September, 1852.

RAVENGLASS, THE GROVE.—Most favourable throughout, except June and July, for haymaking.

BRAYSTONES.—The R in the year 1880 was 4·37 in. less than in the year 1879, and 10·45 in. less than the mean of the previous 16 years.

ST. BEES, ABBOTS COURT.—The rainfall this year is probably the lightest on record.

COCKERMOUTH, WHINFELL HALL.—Rainfall $7\frac{1}{2}$ in. less than the average. August more than usually dry; favourable to harvests in earlier districts.

MIREHOUSE.—A very fine year; one of the best the farmers have had for a long time; fine seed-time; rather wet at end of June and beginning of July, so that some of the seed grass was badly got, but the bulk of the hay crop was well secured. A splendid harvest and well got; turnip crop good; some disease among potatoes, but not much; mangolds poor.

COCKERMOUTH.—The rainfall of the year was below the average of 20 years. March, May, August and October were dry months. August was a very warm and bright month (the driest for last 19 years), an exceptionally fine month for harvesting. October, besides being exceptionally dry, was nearly 6° colder than the average of that month for last 19 years.

BROUGHTON GRANGE.—A very dry spring and exceptionally small falls in August and October (usually wet months here); very few TSS and none directly overhead; only one fall over 1 in. in 24 hours during the year.

PENRITH, BLENCOWE.—Speaking generally the seasons were favourable during the year in this locality. The early months were dry and much below the average rainfall except February, which was 1·12 in. in excess. A very hard frost prevailed during the latter part of January. February was a mild month; March very dry. Seeds of all kinds were got into the ground in capital condition. April was a “droppy” month—its proverbial showers being a welcome contrast to previous years. May was dry, but June and July were noted, the former for frequent gentle showers, the latter for downpours at intervals. Early hay workers were doomed, but those who entered the field later secured the best crops they have had for many years, and in splendid condition. Corn of all kinds was cut here in the most happy style, the weather being simply splendid; but the ingathering was tedious, as a sudden breakdown occurred about the middle of September, which caused the outstanding corn to be considerably injured—a second growth having set in in the sheaf. Winter came upon us in haste, the hills around us being covered with S by the middle of October—an unusual sight so early. The latter part of November and early part of December were mild and at times boisterous; the remainder of the month witnessing hard frost, heavy snows (December 29th a foot thick) and sudden thaws. T was frequent in June, July, and early August. Crops were excellent all round—potatoes little diseased. The year was eminently satisfactory.

MARYPORT, WYNDHAM ROW.—A very fine year for all crops, seed time and harvest being unusually free from wet; very little T during year.

KENDAL, HAWESMEAD.—The third year in succession of deficient rainfall.

BRATHAY VICARAGE.—Rainfall below the average.

SHAP, COPY HILL.—Crops in general very good; little sickness. November had a remarkably heavy rainfall; December a heavy fall of S. Old people say they never saw more lying undrifted.

DIVISION XI.—MONMOUTH, WALES, AND THE ISLANDS.

LLANFRECHFA GRANGE.—Unusually small rainfall; autumn and winter very mild; only four years since 1865 with a smaller rainfall.

DINGESTOW COURT.—The sixth year in succession with skating before Christmas. The seasons were more regular and favourable for

farmers than for the last 5 or 6 years ; March, April, and May were dry months ; February and July were wet months.

CARMARTHEN COUNTY ASYLUM.—The driest year since 1870, when 41·14 in. fell on 143 days.

TEGFYNYDD.—The driest year since 1873.

STACKPOLE COURT.—A fine year and the driest of the past seven.

NARBERTH RECT.—A very fine year on the whole ; rainfall below the average.

HAVERFORDWEST.—Had it not been for the considerable rainfall of the last three months, this would have been an exceptionally dry year ; as it is, it is 7·83 in. below the mean of 25 years. In the latter half of January severe frosts, but very fine calm weather prevailed, the spring was wet, the summer above the average temp. with fine harvest weather in August, the autumn months were wet, cold, and very stormy.

DOLENOG.—A year of moderate rainfall ; heavy floods in December, causing great inundations in the lower part of the valley. A landslip occurred on the 29th on the railway between Forden and Welshpool caused by the heavy flood.

MOLD, BRYN ALYN.—Rainfall about 9 in. in excess of the average of the 14 years 1867–1880. The fall for October, 7·63 in., greatly in excess of any other October during the same period, except the very abnormal year 1872, when October yielded 9·84 in.

BRYMBO.—Max. temp. on 4th September, 80°, min. temp. 20th January, 16°.

ROSSET, TREVALYN HALL.—Rainfall again above the average, although the earlier part of the year was generally dry. A great excess of R in June, July, October, and December. Much T in June and July ; very severe TS on July 17th. After a heavy fall of R on August 7th, the weather cleared up, and no R of any importance fell until September 5th, enabling the farmers to secure the bulk of the corn harvest in very good condition. The max. temp. of the year occurred on September 4th (84°·5) ; the first time the shade temp. had reached 80° in September since 1868. The min. temp. was 16°·4, on January 20th. There was an unusually cold period in October, the ther. falling to 21°·4 on 20th and 22° on 24th. The first half of December was remarkably mild.

DOUGLAS, VICTORIA ROAD.—Rainfall below the average ; a very small fall in January ; in March no R fell from 13th to 29th, inclusive ; none from April 25th to May 21st, inclusive ; none from

August 8th to 31st, a period of most exquisite unclouded sunshine, quite abnormal here. June cold ; July and up to August 7th cold and wet ; autumn very wet, with gales, and distinguished for heavy falls of R ; no summer, except from August 8th to 31st as above, which appears to have been brighter here than in England and most parts of the continent.

ST. AUBINS.—Dry months : January, March, April, May, and August. Wet months : February, July, September, October, and December. Extraordinary rainfall from September 1st to December 31st, viz., nearly 25 in.

MILLBROOK.—Dry spring and wet autumn.

GUERNSEY, YORK PLACE.—Rainfall 7·92 in. above the average of 37 years ; number of wet days five below average.

SCOTLAND.

DIVISION XII.—SOUTHERN COUNTIES.

CARGEN.—Rainfall 14·69 in. below average of 20 years ; mean temp. 0°·7 above average ; mean barometric pressure (29·795 in.) below average. An unusual amount of E. winds.

WANLOCKHEAD.—The hay crop was secured in excellent condition during the dry period of August. All crops were exceptionally good.

TEVIOHEAD MANSE.—Fine summer. Early and good harvest. Severe frost and S in November.

SILVERBUT HALL, HAWICK.—The summer was warm and sunny, and the harvest early and favourable. The last 3 months were characterised by severe frosts.

MELROSE, ABBEY GATE.—Rainfall 5·21 in. below average ; mean temp. (43°·8) about the average. A favourable year for the crops ; grain above average in quantity and good in quality ; potatoes good and unusually abundant : turnips also good ; no haws or holly-berries.

DIVISION XIII.—SOUTH-EASTERN COUNTIES.

EAST LINTON.—The year was one of the finest that has occurred for a long period. The heaviest rainfall taking place after harvest was over was extremely fortunate.

DIVISION XIV.—SOUTH-WESTERN COUNTIES.

BOTHWELL CASTLE.—The season was very favourable, and the crops were good.

GLENDRISHAIG.—Spring cold and dry, summer warm and very dry, scarcely any T, autumn stormy with frost and S unusually early.

PINMORE.—Rainfall nearly 9 in. below average of 14 years. Summer and early autumn unusually fine.

DALRY, CARSEHEAD.—A most productive year for all crops excepting hay.

DIVISION XV.—WEST-MIDLAND COUNTIES.

AUCHENDENNAN.—An unusually dry season. We have had nothing approaching it since 1870, when the total rainfall was 36·20 in.

POLMAISE GARDENS.—A very fine dry year; crops good and harvested in fine condition.

AUCHNABA.—A remarkably fine season.

SKIPNESS.—The smallest total rainfall and the driest summer since observations were commenced in 1868.

CANTIRE, STONEFIELD.—Summer and autumn very fine, but with heavy floods now and again. On two days during the year over 2 in. of R fell.

ISLAY, ELLABUS.—A fine summer and most abundant harvest. End of year very mild. Game of all kinds abundant.

DIVISION XVI.—EAST-MIDLAND COUNTIES.

CALLANDER, LENY.—A singularly dry year. Splendid summer with days of sunshine innumerable.

STRONVAR.—On the whole the best season for crops of all kinds for a number of years.

ARBROATH.—Rainfall 3·74 in. above the average of 38 years.

DIVISION XVII.—NORTH-EASTERN COUNTIES.

FETTERCAIRN.—Dry in May and August, with genial hot and forcing weather; crops above average; rainfall below average; frosts severe in November and December.

TILLYPRONIE, TARLAND.—A fine warm season, but too little R in May.

ABERDEEN, GORDON'S HOSPITAL.—The spring months mild and open ; exceptionally low rainfall in August ; S in some quantity fell as early as October ; very heavy fall of S on the 24th of December, about 9 in. having fallen in three hours, viz., from 6.30 to 9.30 p.m. ; another fall of 4 in. or 5 in. on the 29th.

CLUNY CASTLE.—On the whole a favourable season ; crops as a rule above the average ; insects plentiful and very destructive ; temp. fell to 2° in December and to 1° in November.

OLD DEER.—Rainfall above average ; spring cold and dry, and land in splendid condition ; summer throughout very fine ; crops good and excellent in quality ; a complete want of bloom on all flowering shrubs ; fruit a failure, with the exception of raspberries and strawberries.

GORDON CASTLE.—A very fine growing season up to the end of September, cold, wet, and stormy afterwards, with frequent snow-storms and strong frost to the end of the year.

ACHAREIDH.—Very small rainfall during the first six months of the year, March, May, and August, very dry, especially the last ; temp. moderate ; a great deal of wind in the latter part of the year.

DIVISION XVIII.—NORTH-WESTERN COUNTIES.

STRATHCONAN.—Summer unusually mild.

ARDROSS CASTLE.—The months of March, May, and August were unusually dry. The rainfall for the year was 7·19 in. below the average of the last 8 years.

LOCHMADDY.—The year till November was remarkably fine ; the fall of R in July and August being particularly small.

ROY BRIDGE, KINCHILLIE.—Harvest general in August, which is early, and weather unusually good for securing it.

ROY BRIDGE.—The summer months were very dry and hot, the highest temp. being 81°·0 on the 13th of August ; the lowest was 9°·0 on 17th December. Frost set in on September 20th, and S fell on the hills on the 19th ; this early frost scorched the foliage of trees and flowers like a fire. The winter set in earlier than usual, and more severe. The harvest was early and good. Potatoes plentiful.

LAGGAN.—Excessively hot in summer, and extremely cold in winter. One of the earliest and best harvests since the beginning of this century.

BEAUFORT CASTLE.—A very dry season. On only one day, 25th June, during a TS, did the R amount to 1 in.

DIVISION XIX.—NORTHERN COUNTIES.

DUNROBIN.—Hay time and harvest were all that could be desired. Fine crops and excellent quality ; altogether a fine season.

WATTEN.—General character dry, warm, and sunny, till October ; very fine summer and early winter.

IRELAND.

DIVISION XX.—MUNSTER.

CORK, BLACKROCK.—The weather of 1880 was on the whole more genial than that of several years past. The rainfall was 10·33 in. below the average of 15 years. The extremes of temp. in the shade were 89° on the 27th and 29th of August, and 22° on the 29th of October and the 3rd of November. Harvest was abundant and well got. The potato crop unusually good both in quantity and quality. February, March, April and November, all had rainfalls above the average. The January fall was 4 in. below average.

CORK.—Rainfall for the year 10½ in. below the average. The coldest October for 50 years ; mean temp. 45¾° ; mean temp. of year 52°. Max. 79° on August 10th ; min. 25° on November 20th.

DARRYNANE ABBEY.—A very dry year, but 1875 had fewer wet days. The potato crop the best since 1844, and the harvest generally remarkably good.

DROMORE CASTLE.—A very fine year ; high temp. during the summer and much sunshine ; more T showers with heavy R than for many years. All crops good.

CLONMEL, GLENAM.—A very fine summer and good crops.

TIPPERARY, HENRY STREET.—The weather generally was fine and the harvest abundant. The rainfall was below the average.

CASTLE LOUGH.—Spring months on the whole favourable. June and July very unfavourable for haymaking, owing to the great prevalence of TSS. August, September, and October very fine, and favourable for harvest operations.

MILTOWN MALBAY.—The first six months of the year were dry and cold ; July was very rainy, with TSS. The harvest months the finest ever remembered. Cold weather set in early in October, frost appear-

ing on the 2nd. Much R in November and December, with heavy gales, frosts, and cold, variable weather.

DIVISION XXI.—LEINSTER.

CASTLE BORO.—Harvest remarkably good in the whole neighbourhood ; root crops especially good.

STONEYFORD, INISNAG GLEBE.—Severe frosts in spring ; May and June very harsh and dry ; July very wet ; August exceedingly fine and warm. Very fine autumn. Severe frosts at the end of October and beginning of November ; December a dry, mild month.

FASSAROE.—Rainfall above the average.

BAGNALSTOWN, FENAGH HOUSE.—Season throughout favourable ; crops very good and well ripened. The whole year a great improvement on 1879.

DALKEY, BELLEVUE PARK.—The mildest spring for years, and the wettest July.

DUBLIN, FITZWILLIAM SQUARE.—In the six months ending June 30th, the rainfall amounted to only 11·12 in., not one-third of the total fall in the year. The rainy days in the first six months were 88 ; in the second six months, 100. A remarkable drought commenced on August 9th, and may be said to have lasted until September 9th. Within this period only ·33 in. of R fell on five days. The rains of July and October were almost unprecedented. The downpour on October 27th (2·74 in.) was the heaviest recorded since observations were commenced in 1865. In two cyclones in October not less than 7 in. of R fell in Dublin.

DUBLIN, PHOENIX PARK.—The total rainfall was the greatest since 1852, in which year 38·54 in. was recorded. There was an extraordinary fall of R on the 27th October, viz., 3·03 in., the greatest recorded since the establishment of this Observatory in 1837.

TRIM.—The first six months of the year were cold and dry, and it was only in July that any natural heat came, but it was accompanied by heavy showers. August and September were remarkably fine. A storm on 26th and 27th of October, followed by a downpour of R, caused great destruction to undrained lands.

STEPHENSTOWN.—Unusually little R.

DIVISION XXII.—CONNAUGHT.

CREGG PARK.—A fine year and very bountiful crops.

BALLINASLOE, GARBALLY GARDENS.—A splendid year throughout, with the exception of July, which was very wet.

DIVISION XXIII.—ULSTER.

FLORENCE COURT.—The rainfall was much below the average, the spring months were moderately dry, the summer months warm and dry, except July, which was wet, and the autumn months unusually dry and warm ; crops plentiful and good.

NEWTOWNARDS.—The smallest rainfall of any year during the last six. A wet July, preceded and followed by a dry month, produced an unusually abundant harvest.

SYDENHAM, ALMA HOUSE.—The rainfall of 1880, 31·62 in., was no less than 6·78 in. below the average of the preceding 14 years. January unusually dry, rainfall 2·79 in. below the average, with keen frosts towards the end of the month, the min. reading of 10° being recorded several times. February was near the average. March dry and fine ; only slightly above the average, affording an excellent seed time. April : the proverbial “tears” were in excess of the “smiles,” the fall being 1·98 in. above the average. May and June were dry, warm, and genial ; the former 1·14 in. and the latter month 0·60 in. below the average, with vigorous vegetation. July, on the contrary, was excessively wet, 2·78 in. above the average, occasioning much flooding and serious apprehensions as to crops. Fortunately August was unusually dry and fine, only 0·65 in. being recorded for the month ; there were 25 consecutive days without a drop, accompanied by high temp. and much sunshine ; under these influences cereals ripened very rapidly, and harvesting burst upon the county so suddenly, that crops could hardly be cut sufficiently quickly to avoid loss. The dry period continued to the close of the year, the crops being carried in splendid condition, though, from the rapid ripening in August, much weak grain and undeveloped root crops resulted. Snow appeared early, being recorded on 19th October ; on the whole, however, the autumn was the most enjoyable we have had since 1868.

BELFAST, NEW BARNSELY.—A fine open spring, May and June fine ; July the wettest month of the year. The remainder of the year all that could be desired for the maturing and in-gathering of the crops.

MONEYDIG.—January, February and March dry, April rather wet, May and June both too dry, July 26th and 27th, the heaviest rainfall on any two consecutive days since January, 1864 ; August 4th, the heaviest on any one day during the same time (2·00 in.). From 7th August till 6th September there was only enough R to wet the stones,

two or three times ; this was by far the longest dry period since 1864 ; September wet, October very fine up to the 20th, on which and the two following days S fell and severe frosts occurred. November and December nothing unusual. On the morning of the 11th of June a sharp frost occurred, cutting down to the ground all potatoes growing on bog and low-lying land. Flax and upland hay are both deficient, owing to the dryness of May and June. Potatoes are a big crop, even after the loss from the frost in June ; oats about an average ; a bad grass year ; hardly an apple to be seen.

LONDONDERRY ASYLUM.—On the whole the most favourable year for agricultural pursuits which we have had for several years past.

STEWARTSTOWN.—The rainfall for the year was rather less than the average.

INVER.—A beautiful year, many fruit trees blossoming and fruiting in October. Hay and crops saved without a shower of R.

REVLIN HOUSE.—The year was particularly favourable for farming, as the rainfall was unusually little at the critical time, when crops were being planted and reaped, and plentiful when most needed to bring them to maturity.

CONVOY HOUSE.—The early part of the year was cold and harsh, with much frost and S. The summer was very fine and warm. A bad year for fruit and flowers, but good for agriculture, and the harvest excellent. The rainfall was considerably above the average, but from the manner in which it fell, every one calls it a dry year. Max. temp. 80° on August 15th ; min. 19° on January 20th.

BALLYARE HOUSE.—The year was on the whole dry, the month of August and first week of September especially so, as well as particularly hot. From the middle of October to the end of the year there was more cold weather than usual.

KILLYGARVAN GLEBE.—The year was a fine one, the rainfall below the average ; one great storm on 26th November, and several times high wind during the year ; a hard frost for a week in January, and some S and frost in the latter part of the year ; very warm weather in August and part of September. Max. temp. 83°·5, min. 15°·5.

HEAVY RAINS IN SHORT PERIODS.

I HOPE ere long to be able to prepare a complete summary of our knowledge upon this subject, but at present am unable to do more than refer to the diagram given as frontispiece to *British Rainfall*, 1876, and offer a few remarks upon the facts in the following table studied by the light of that diagram.

Two elements are involved in a remarkable "Heavy rain in a short period," viz. (1) Great rate of fall, or, as it is better expressed by the single word, Intensity—which, if I may coin a word, might be further illustrated by the word "Torrentiality;" and (2) Duration.

This point will be best illustrated by reducing to figures the curve given in the above-mentioned diagram, which showed that which then appeared to be the limit *below* which rains occurred so frequently that their separate notice seemed unnecessary.

It is still uncertain whether one rule applies to all localities—whether, in fact, exceptionally heavy rains have or have not any relation to geographical position. But this caution being premised, the numerical values upon which the curve was based, were :—

Duration in minutes	5	10	15	20	25	30	45	60	75	90	105	120
Amount in inches...	·20	·30	·35	·40	·44	·50	·60	·70	·75	·78	·82	·83
Rate in inches	2·40	1·80	1·40	1·20	1·06	1·00	·80	·70	·60	·52	·47	·42

Hence we see that a rate of more than 2 in. per hour is not remarkable unless it is maintained for nearly ten minutes, and a rate of an inch an hour is only remarkable when it lasts at least half-an-hour.

Having premised these general outlines, I may proceed to indicate the most remarkable entries in the following table :—By far the most striking is the fall of 2·90 in. (nearly *three inches*) in half-an-hour at Ash Hall, Cowbridge, South Wales, on July 22nd. As the subsequent entries of 1 in. in half-an-hour are unusual, it will be obvious how rare must be such a fall as that at Ash Hall. Other noteworthy falls were those at Twyford, near Athlone, in Westmeath, on June 25th, when 3·07 in. fell in about an hour and a quarter, that at Wath-upon-Deane, Rotherham, Yorkshire, of 3·00 in. in about two hours on September 15th, and that of 2·95 in. in two hours and 6 minutes at Wold Newton, on September 14th.

Heavy Falls in Short Periods.

Date.	Division.	Station.	Amount.	Duration.		Rate per hour.
			in.	hr.	min.	in.
July 26 ...	I.	Camden Square	·08	...	2	2·40
June 17 ...	II.	Addiscombe	·11	...	4	1·65
Aug. 2 ...	IX.	Middlesborough	·31	...	5	3·72
June 26 ...	I.	Camden Square	·19	...	6	1·90
July 1 ...	I.	Camden Square	·30	...	7	2·57
June 24 ...	II.	Tenterden	·24	...	7½	1·92
July 3 ...	IV.	Norwich, Essex Street ...	·28	...	10	1·68
July 10 ...	VI.	Ross, The Graig	·67	...	15	2·68
June 25 ...	I.	Camden Square	·41	...	25	·98
July 22 ...	XI.	Ash Hall	2·90	...	30	5·80
April 15 ...	IV.	Malden, Norton Hall.....	1·03	...	30 ?	2·06
June 23 ...	VII.	Market Harborough	1·00 ?	...	30	2·00
June 22 ...	XX.	Glenville	·98	...	30 ?	1·96
June 22 ...	XVII.	Tomintoul	·81	...	30	1·62
July 9 ...	VII.	Derby, Findern	·65	...	30	1·30
July 14 ...	III.	Assenton	·62	...	30	1·24
June 22 ...	V.	Babbacombe	·62	...	30	1·24
Aug. 26 ...	II.	Maidstone, Hunton Court	·61	...	30	1·22
July 3 ...	IV.	Norwich, Essex Street ...	·60	...	30	1·20
Aug. 30 ...	V.	Crewkerne, Bincombe Ho.	·73	...	45	·97
Aug. 6 ...	VII.	Partney	1·29	...	50	1·55
July 15 ...	III.	Amphill, Silsoe	·80	...	50	·96
Aug. 27 ...	VI.	Cheadle, Oakamoor	1·72	1	...	1·72
July 2 ...	XXIII.	Newtownards	1·34	1	...	1·34
Aug. 6 ...	III.	Silsoe	1·18	1	...	1·18
July 22 ...	V.	Gillingham	1·15	1	...	1·15
July 22 ...	V.	Langtree Wick	1·11	1	... ?	1·11
July 13 ...	VII.	Derby, Findern	1·05	1	...	1·05
June 23 ...	VII.	Loughborough	·84	1	...	·84
June 25 ...	VI.	Middleton, Chirbury	·83	1	...	·83
Aug. 6 ...	III.	Waresley	·71	1	...	·71
June 25 ...	XXI.	Twyford	3·07	1	15 ?	2·45
July 17 ...	VI.	Middleton, Chirbury	·97	1	15	·77
July 14 ...	III.	March	2·13	1	30	1·42
July 13 ...	VI.	Stockton	1·72	1	30	1·14
June 25 ...	III.	Wootton Rectory	1·27	1	30 ?	·85
July 29 ...	VII.	Horncastle	1·49	1	45	·85
Sept. 15 ...	IX.	Wath-upon-Deerne	3·00	? 2	...	1·50
Aug. 7 ...	IV.	Swaffham	2·18	? 2	...	1·09
July 7 ...	XVII.	Keith	2·16	2	...	1·08
Aug. 30 ...	VII.	Ashby Magna	1·72	2	...	·86
July 14 ...	IV.	Terrington	1·06	2	...	·53
June 25 ...	IV.	Leyton Observatory	1·00	2	...	·50
Oct. 8 ...	VII.	Ketton Hall	·94	2	...	·47
Sept. 14 ...	IX.	Wold Newton	2·95	2	6	1·40
July 17 ...	V.	Stevenstone	3·05	3	...	1·01
July 21 ...	XI.	Brecknock, Bridge Street.	1·30	3	...	·43
June 25 ...	I.	Hackney, Richmond Road	2·28	3	10	·72

see 152

HEAVY FALLS IN 24 HOURS DURING 1880.

FROM every station at which the fall of rain is measured daily, the observer is expected to report the largest amount upon any one day in each month, even if he does not send (as about 900 do send) a complete return of the fall on every day throughout the year.

One of the processes through which all the returns have to go is the extraction for each station of the following data, and I fill in the details as a specimen :—

Date of Largest fall on any one day	<i>November 13th.</i>
Division in which it occurred	X.
Name of Station	<i>Seathwaite.</i>
Fall on that date.....	4·75 in.
Total fall in year.....	120·32 ,,
Per-centage which max. fall is of yearly total ...	3·9

The last value is, of course, worked out from the two preceding amounts.

For 1880 there were 1117 such entries, whence our readers will see that the extraction of these values is not a trifling matter. But they are worth all the trouble, for being grouped according to their date, they afford the best possible ground for studying the limits of the great rainfalls of the year. And it has one other great, but quite incidental, utility : it frequently leads to the detection of errors of observation or of copying—errors, that is, which do not involve bad addition, and have therefore passed undetected the checking for arithmetical errors.

PART I.—CHRONICLE.

In order to avoid needless repetition and to save space, the greatest rainfall on any one rainfall day, *i.e.*, 9 a.m. to 9 a.m., during the year is, throughout this article, indicated by the letter M, which must be interpreted as “Maximum daily rainfall during the year.”

APRIL 21st.

The first M which was either experienced at any considerable number of stations, or at all noticeable at any single station. It was

the M at 37 stations, wholly in the S. of Scotland, or in the N.E. of Ireland. The fall only exceeded 2 in., or exceeded 6 per cent. at the following stations :—

XII.	Wanlockhead.....	4·10 in.	or 7·3 per cent.
XIII.	North Esk Res ...	2·05 „	5·5 „
XIV.	Newmains	2·10 „	4·7 „
„	Ridge Park.....	1·77 „	6·1 „
„	Cambus Wallace...	2·01 „	6·7 „
XXIII.	Newcastle	2·50 „	6·2 „

JUNE 23RD.

A M occurred at 8 very scattered stations, but the only one at all remarkable is—

VI. Thorganby Villa, Wolverhampton... 3·02 or 8·9 per cent.
and this was comparatively local, for at Wrottesley, four miles W.N.W., the fall was only 0·80 in., and at Walsall, six miles E., it was only 1·03 in.

JUNE 25TH.

The M at 14 stations, mostly in the N. or N.E. of the metropolis, but with two or three very widely scattered. The most noticeable entries are—

I.	Richmond Road, Hackney... ..	2·28 in.	or 8·1 per cent.
„	Squires Mount, Hampstead ...	1·85 „	6·1 „
„	The Pryors, Hampstead.....	1·89 „	6·3 „
„	Clapton Common	1·69 „	6·2 „
XXI.	Twyford, Athlone	3·07 „	7·6 „

JULY 7TH.

A heavy M in Banffshire, where a few more stations would have been useful :—

XVII.	Keith.....	3·25 in.	or 9·6 per cent.
„	Grantown...	1·81 „	6·0 „
„	Elchies	2·79 „	8·5 „

JULY 13TH.

This M was due to severe thunderstorms on the afternoon of 13th and in the early morning of 14th. Their chief violence was between Warwickshire and the South of Lincolnshire.

III.	Weedon	2·03 in.	or 5·8 per cent.
„	Althorpe	2·10 „	6·4 „
VI.	Stockton, Rugby ...	3·57 „	11·5 „
„	Rugby	2·20 „	5·9 „
„	Witley Rectory ...	2·28 „	6·3 „

The rain gauge at Bucknall, Horncastle, was allowed to run over.

JULY 14TH.

This was the M at 52 stations, chiefly between Reading and Wisbeach, or slightly S.E. of the area visited on the previous day.

(Above 2·25, or above 7 per cent.)

III.	Ware.....	2·57	in. or 8·9 per cent.
„	Mentmore	2·75	„ 9·5 „
„	Olney (Filgrave).....	2·93	„ 9·2 „
„	Kinbolton (Hargrave)	2·33	„ 6·5 „
„	Oundle	2·34	„ 7·3 „
„	Whittlesea Mere.....	2·83	„ 9·4 „
„	Aspley Guise	2·21	„ 7·6 „
„	Cardington	2·37	„ 8·2 „
„	Bedford	2·30	„ 7·4 „
„	March	2·77	„ 9·2 „
„	Marmont Priory.....	3·30	„ 11·8 „
„	Euximoor Ho.....	2·85	„ 9·5 „
„	Coldham Hall. ...	2·26	„ 7·5 „
„	Wisbeach Obs.	2·42	„ 7·5 „
IV.	St. German's Outlet ...	2·32	„ 7·7 „
VII.	Market Harborough ...	3·10	„ 8·1 „
„	Foxton Locks.....	2·59	„ 7·8 „

JULY 13TH & 14TH.

It will be noticed that M are reported for the vicinity of Northampton both for the 13th and the 14th. This was the case, and the totals for the two days at several stations in Central England were high. The following are some illustrations :—

		13th.	14th.	Total.			13th.	14th.	Total.
III.	Ware.....	·14	2·57	2·71	VI.	Frogmore	1·03	1·86	2·89
„	Addington.....	·72	1·88	2·60	„	Stockton	3·57	1·12	4·69
„	Helidon	1·97	1·11	3·08	„	Willeby Rect...	2·28	1·40	3·68
„	Castle Ashby	·61	2·21	2·82	„	Kibworth.....	1·23	2·59	3·82
„	Sedgebrook ...	1·60	2·15	3·75	„	Kilby	1·46	1·66	3·12
„	Althorp.....	2·10	1·75	3·85	„	Dalby Hall ...	1·50	2·21	3·71
„	Hargrave	·45	2·33	2·78	„	Thorpe Arnold	1·49	1·50	2·99
„	March	·07	2·77	2·84	„	Waltham	1·80	1·40	3·20
„	Euximoor Ho.	·30	2·85	3·15	„	Harston	1·10	1·47	2·57
					„	Uppingham ...	1·27	1·26	2·53
					„	Greetham.....	1·69	1·29	2·98
					„	Mrkt.Overton	1·20	1·46	2·66

These figures lead to the startling conclusion that over an area of quite 2,500 square miles the average fall of rain on these two days in July last was almost exactly 3 in. As one inch gives about 14 million gallons per square mile, the fall over these 2,500 square miles was—

$$2500 \times 3 \times 13,678,720 = 102,590,400,000 \text{ gallons,}$$

or roughly a hundred thousand million gallons. No wonder that “Some bridges on the Midland Railway were washed down, and traffic was temporarily suspended.”

JULY 17TH.

With reference to the flood on the little River Dee at Llanuwchllyn, at the south-western foot of Bala Lake, our records give little information. The fall scarcely exceeded 2 in. at any of our stations, and was only 2·04 in. at Dolgelly, 1·85 in. at Bala, and 1·31 in. at Hoel-y-ffrid. It is therefore evident from the statements on page [15] that there must have been a burst waterspout, or, at any rate, a torrential rain over a limited area.

A similar fact occurred on the same day near Torrington, in Devonshire, for at Stevenstone 3·13 in. fell in 3 hours, although at Little Silver, three quarters of a mile further west, it was only 1·97 in., and at Torrington itself, two miles west of Stevenstone, only 1 in. fell.

AUGUST 7TH.

The M in two widely separate districts, one a small portion of East Norfolk, the other including North Staffordshire, Cheshire, and the South-west of Lancashire. Neither of them was very important, the only falls exceeding 2 in., or 6 per cent., were :—

IV.	Swaffham.....	2·18 in.	or 6·4 per cent.
VI.	Cheadle, Heath House.....	2·33 „	6·2 „
	„ Tean Vic.....	2·18 „	5·7 „
VIII.	Middlewich	2·20 „	6·3 „
	„ Withington.....	2·02 „	5·8 „
	„ Highfield Bank	2·01 „	5·8 „
	„ Heaton.....	2·04 „	4·5 „

SEPTEMBER 11TH.

Although not of very large amount, the fall on this day was the M at 67 stations, all of them east of a line joining Weymouth to Hull. The falls exceeding 2 in., or 6 per cent., were :—

II.	Singleton.....	2·12 in.	or 5·3 per cent.
	„ Droxford Rectory.....	2·11 „	6·4 „
III.	Hitchin	1·86 „	6·4 „
	„ Pampisford Hall	2·18 „	7·8 „
	„ Abington Pigotts	1·56 „	6·2 „
IV.	Epping.....	2·43 „	6·7 „
	„ Sheering	2·04 „	7·6 „
	„ Earl's Colne	1·88 „	7·5 „
	„ Dunham	2·02 „	6·3 „

SEPTEMBER 14TH.

The M at 66 stations chiefly in the South-east of England, but extending over parts of Lincolnshire, Yorkshire, and Northumberland, into the S.E. of Scotland. The largest fall and the largest pre-

centage was at Harefield Park, Middlesex, where Mr. Vernon says "3·20 in. of R fell in 6 or 7 hours; it rained as it does in the tropics." This fall of 3·20 in. was 9·3 per cent. of the total for the year. The other falls exceeding $2\frac{1}{2}$ in., or 7 per cent., were:—

II.	Haslemere	2·55 in.	or 6·2 per cent.
III.	Peterboro' (Westgate) ..	2·45 "	7·9 "
"	Milton, Ernest	2·68 "	8·6 "
IV.	Runham (Filby)	1·86 "	7·1 "
IX.	Lowthorpe	2·62 "	7·6 "
"	Foxholes	3·19 "	7·7 "
"	Ganton	2·72 "	7·5 "
X.	Pawston	2·57 "	8·0 "
XIII.	East Linton	2·10 "	8 0 "

SEPTEMBER 15TH.

The M at 24 stations, but only especially heavy in the South of Yorkshire. This fall really occurred in the early morning hours of September 16th, when one of the observers at Wath-upon-Deerne, Rotherham, says, "More than 3 in. fell in less than two hours during the early morning of the 16th, causing great floods and much damage." The falls exceeding $2\frac{1}{2}$ inches, or 7 per cent., were—

IX.	Rivelin	2·95 in.	or 6·2 per cent.
"	Wath-upon-Deerne ...	3·18 "	7·5 "
"	" " (Baxter)	3·20 "	7·7 "

SEPTEMBER 11TH TO 15TH.

It will be noticed that several days of M have followed at short intervals. Some of these were wide spread, and the fall during the five days, September 11th to 15th, was, over a large part of England and South Scotland, more than 4 in. In order to keep the following table within a reasonable size it contains only those stations at which the fall in the five days exceeded 5 in.

DIV.	COUNTY.	STATION.	SEPTEMBER.					TOTAL
			11th.	12th.	13th.	14th.	15th.	
			in.	in.	in.	in.	in.	in.
I.	Middlesex	Harefield Park* ...	1·32	·25	3·20	1·10	1·11	6·98
II.	Surrey ...	Haslemere	1·80	·55	·05	2·55	·91	5·86
"	" ...	Alderbrook	1·51	·51	·16	1·77	1·13	5·08
"	" ...	Farnham	1·68	·53	·10	1·91	·80	5·02
"	Sussex ...	Midhurst	1·83	·57	·06	2·09	·72	5·27
"	Hants ...	Petersfield	1·48	·90	...	2·20	·50	5·08
III.	Herts.....	Hemel Hempstead...	1·53	·51	·02	2·17	1·39	5·62
"	" ...	Berkhampstead ...	1·38	·90	·10	1·27	1·95	5·60
"	" ...	Great Gaddesden...	1·30	·80	·16	1·25	1·88	5·39
"	" ...	Kensworth	1·46	·80	·72	·67	1·93	5·58
IX.	Yorks ...	Wath-upon-Deerne	·84	1·08	...	·90	3·18	6·00
"	" ...	" " "	·86	1·09	...	·92	3·20	6·07
"	" ...	Foxholes	1·34	·17	·01	3·19	·93	5·64

* Gauge not read at 9 a.m.

OCTOBER 4TH.

The M at 112 stations, chiefly in the south-west and west of England, and in South Wales. The falls exceeding $2\frac{1}{2}$ in., or 7 per cent., were—

V. Glenthorne	3·22 in.	or 6·3 per cent.
„ Truro R.I.	3·00 „	7·9 „
„ Bodmin, Fore St. ...	2·67 „	5·9 „

OCTOBER 6TH.

The M at 23 stations, chiefly in Cambridgeshire, Essex, and Norfolk. Max. fall, 1·78 in., or 5·2 per cent., at Papworth Everard, near St. Ives, Huntingdonshire; max. per-centage, 6·7, at Beach House, Cambridge.

OCTOBER 9TH.

The M at 56 stations, all in the S.E. of England or in the Channel Isles; but the only amounts exceeding $2\frac{1}{2}$ in., or 7 per cent., were—

II. Croydon (Wandle Road)...	2·23 in.	or 7·5 per cent.
„ „ (Addiscombe) ...	2·18 „	7·2 „
„ Tunbridge Wells (Pembury)	2·38 „	7·7 „
„ Maidstone (Hunton Court)	2·15 „	8·0 „
„ Seven Oaks (River Hill)...	2·30 „	7·9 „
„ Bromley Common.....	2·30 „	7·2 „
„ Lee	2·49 „	7·7 „
„ Arundel	2·34 „	7·3 „
„ Crowborough Observatory	2·67 „	7·4 „
„ Balcombe Place.....	2·56 „	6·9 „
„ Eridge [Tunbridge Wells].	2·87 „	8·4 „

Rather heavier falls occurred at one or two places in Kent and Essex. There are three gauges at Crossness, but all hold less than the minimum stated in Rule XVI., viz., 4 in., and ran over, as did also the gauge at Woldringfold, Cowfold, Sussex, but it would only hold $2\frac{1}{4}$ inches. At Shoeburyness no observations were made on Sunday, but the total for the 9th and 10th was 2·54 in.; at most of the other Essex stations the fall was trivial, but at the following it was heavy:—Norton Hall, Maldon, 3·25 in. in 26 hours, on 9th *and* 10th. There was a report that 2·92 in. fell at Great Baddow, although at Chelmsford, only three miles N.W., only $1\frac{1}{2}$ in. fell.

OCTOBER 26TH.

The first portion of a fall extending over parts of two days. The M at 32 stations, chiefly in Wilts, Dorset, Gloucester, South Wales, and the S.E. of Ireland. The only fall exceeding $2\frac{1}{2}$ in., or 7 per

cent., was at Balbriggan, Co. Dublin, where the fall was 2·77 in., or 8·1 per cent. There were also heavy falls in the upper watershed of the Tees, in Yorkshire and Durham.

OCTOBER 27TH.

The **M** at 185 stations, in Shropshire, Stafford, Warwick, Lincoln, Notts, Derby, Cheshire, Lancashire, Yorkshire, North Wales, and the south-east of Ireland. The falls were so large that only those exceeding 3 in., or 7 per cent., can be quoted—

VII.	Chatsworth	3·40 in.	or 6·7 per cent.
VIII.	Garstang (Vale House).....	3·86 „	9·0 „
IX.	Pateley Bridge, (Castle St.)	3·37 „	7·2 „
„	Richmond	2·70 „	7·1 „
„	Guisboro' (Hutton Hall) ..	2·90 „	7·2 „
X.	Brinkburn	2·25 „	7·0 „
XI.	Bodfaen	3·03 „	6·9 „
„	Port Madoc	3·06 „	5·6 „
„	Bodorgan	3·00 „	8·0 „
„	Holyhead	2·87 „	8·1 „
„	Llwydiarth.....	3·42 „	7·9 „
XXI.	Fitzwilliam Square	2·74 „	7·8 „
„	Phoenix Park.....	3·03 „	8·4 „
„	Glasnevin	2·98 „	8·3 „
„	Williamstown	3·12 „	8·6 „

NOVEMBER 13TH.

The **M** at 30 stations, chiefly in wet districts, north-west Yorkshire, Cumberland, Westmoreland, and South Wales. There were no high per-centages, and the fall was not at all remarkable for the districts, although it exceeded 3 in. at the following stations :—

X.	Seathwaite	4·75 in.	or 3·9 per cent.
„	Elterwater	3·28 „	4·2 „
„	High Close.....	3·15 „	4·4 „
XI.	Treherbert	3·37 „	3·9 „

PART II.—ABSTRACT.

The data which have formed the basis of the previous article upon the heavy rainfalls of 1880 are also available as evidence of the character of the heavy rains of 1880, both collectively and as compared with those of previous years.

Table I. shows that at 16 stations there were falls of upwards of 3·18 in. in the 24 hours ending 9 a.m., and that at two of them the fall exceeded 4 in.

There is one lesson implied by this table, which I have urged over and over again, but which every year I find has been neglected by somebody. The lesson is Rule XVI. *It is not desirable to purchase any new rain gauge of which the capacity is LESS THAN FOUR INCHES.* This year we have not lost so many returns as usual by the rain gauges overflowing ; but all the gauges at Crossness were allowed to run over on October 9th. Table I. shows that at five stations, of which the total fall was between 28 and 35 inches, there were individual days with 3·20 in. or upwards. But still stronger evidence is afforded by some previous years (see Table IV., columns 6 and 7), evidence which shows that I should have been justified in fixing the minimum capacity at five inches ; and this, be it remembered, *not* for wet districts but for dry ones, like Kent, Leicester and East Yorkshire.

As compared with previous years, Table II. shows that the data in Table I. are in no way remarkable ; and the same may be said of Tables III. and IV.

Table VI. gives, in the last three lines, the summing up of the whole matter, whence we learn that the heavy falls have been, both as regards per-centage and amount, but especially as regards amount, considerably above the average. As regards per-centage they have been exceeded only by 1865, 1870, 1871, and 1875 ; and as regards amount, their average amount has been greater than in any year except 1875.

TABLE I.—*Maximum Falls in 1880.*

Date.	Div.	Stations.	Depth.	Per cent.	Fall in year.
Nov. 13 ...	X.	Seathwaite.....	4·75in.	3·9	120·32in.
April 21 ...	XII.	Wanlockhead	4·10 „	7·3	56·41 „
Oct. 27 ...	VIII.	Garstang (Vale House)	3·86 „	8·9	43·38 „
July 13 ...	VI.	Southam (Stockton).....	3·57 „	11·4	31·31 „
Oct. 31 ...	IX.	Rounton Grange	3·54 „	10·8	32·66 „
„ 27 ...	XI.	Llwydiarth Egsob, Anglesea.	3·42 „	7·9	43·15 „
„ 27 ...	VII.	Chatsworth	3·40 „	6·7	50·01 „
„ 27 ...	IX.	Castle Stead	3·37 „	7·1	47·37 „
Nov. 13 ...	XI.	Treherbert (Tydraw)	3·37 „	3·9	84·79 „
July 14 ..	III.	Marmont Priory	3·30 „	11·7	28·14 „
Nov. 13 ...	X.	Elterwater	3·28 „	4·2	78·27 „
July 7 ...	XVII.	Keith	3·25 „	9·4	34·48 „
Oct. 4 ...	V.	Lynmouth (Glenthorne).....	3·22 „	6·3	51·03 „
Sept. 14 ...	I.	Harefield	3·20 „	9·3	34·11 „
„ 15 ...	IX.	Wath on Dearne	3·20 „	7·8	40·61 „
„ 14 ...	„	Foxholes	3·19 „	7·7	41·42 „

TABLE II.—*Comparison of Maximum Falls with those in previous years.*

MEAN.				ABSOLUTE.			
Years.	Depth.	Per Cent.	Mean total fall at these stations.	Depth.	Per Cent.	Station.	Division.
	in.		in.	in.			
1865 ...	3·67	6·4	61·8	6·41	5·5	Seathwaite.....	X.
1866 ...	3·40	4·4	86·2	6·38	3·6	Seathwaite.....	"
1867 ...	3·17	9·0	42·5	4·78	17·7	Hartlip	II.
1868 ...	3·32	6·1	65·9	5·60	4·8	Camusinas.....	XV.
1869 ...	3·68	5·0	77·7	6·70	4·5	Seathwaite.....	X.
1870 ...	3·20	7·5	43·8	6·00	17·1	Tongue	XIX.
1871 ...	3·08	5·7	61·6	4·24	9·6	Melbury.....	V.
1872 ...	4·10	6·6	73·1	5·82	3·2	Seathwaite.....	X.
1873 ...	2·97	6·2	60·7	4·20	2·9	Seathwaite	"
1874 ...	3·96	4·6	86·5	5·32	4·4	Bryn Gwynant	XI.
1875 ...	4·52	7·8	63·9	5·33	9·7	Newport W.W.	"
1876 ...	3·37	5·9	57·6	4·50	5·5	Foffany	XXIII.
1877 ...	3·77	4·6	93·4	4·98	5·3	Skye, Portree..	XVIII.
1878 ...	3·57	7·4	57·2	4·24	8·6	Springfield ...	XI.
1879 ...	3·66	9·5	50·4	4·05	4·1	Little Langdale	X.
Mean ...	3·56	6·4	65·5	5·14	7·1	.....	...
1880 ...	3·50	7·7	51·1	4·75	3·9	Seathwaite.....	X.
Diff. ...	— ·06	+1·3	—14·4	— ·39	—3·2	.....	...

TABLE III.—*Maximum Per-Centages in 1880.*

Date.	Div.	Stations.	Per Cent.	Depth.	Fall in year
July 14 ...	III.	Marmont Priory Lock.....	11·7	3·30in.	28·14 in.
" 13 ...	VI.	Southam (Stockton)	11·4	3·57 "	31·31 "
Oct. 31 ...	IX.	Rounton Grange	10·8	3·54 "	32·66 "
July 14 ...	III.	Euximoor House	9·6	2·85 "	29·70 "
" 7 ...	XVII.	Keith	9·4	3·25 "	34·48 "
" 14 ...	III.	Whittlesea Mere	9·4	2·83 "	29·95 "
" " ...	"	Mentmore	9·3	2·75 "	29·40 "
Sept. 14 ...	I.	Harefield	9·3	3·20 "	34·11 "
July 14 ...	III.	March	9·2	2·77 "	30·00 "
" " ...	"	Oundle (Filgrave Rec.)	9·2	2·93 "	31·84 "
June 23 ...	VI.	Wolverhampton (Thor. Villa)	9·0	3·02 "	33·54 "
Oct. 27 ...	VIII.	Garstang (Vale House)	8·9	3·86 "	43·38 "
July 14 ...	III.	Ware	8·8	2·57 "	29·07 "
Oct. 27 ...	XXI.	Williamstown	8·7	3·12 "	35·87 "
Sept 14 ...	III.	Milton Ernest	8·6	2·68 "	31·08 "
July 7 ...	XVII.	Elchies	8·5	2·70 "	32·81 "

TABLE IV.—*Comparison of Maximum Per-Centages with those in previous years.*

MEAN.				ABSOLUTE.			
Years.	Per Cent.	Depth.	Mean total fall at these stations.	Per Cent.	Depth.	Station.	Division.
		in.	in.		in.		
1865 ...	9·9	2·62	28·4	13·0	4·40	Fleckney	VII.
1866 ...	8·1	2·31	29·3	10·0	2·48	Burton	VI.
1867 ...	11·0	2·85	25·3	17·7	4·78	Hartlip	II.
1868 ...	8·6	2·55	30·1	11·0	4·00	Tongue	XIX.
1869 ...	7·9	2·17	27·9	10·0	3·40	Tillydesk	XVII.
1870 ...	10·0	2·34	22·9	17·1	6·00	Tongue	XIX.
1871 ...	9·0	2·43	26·8	11·5	3·62	Warter	IX.
1872 ...	8·1	3·43	42·5	10·0	3·70	Hillington Hall	IV.
1873 ...	9·7	2·39	24·7	11·8	2·77	Oscott.....	VI.
1874 ...	9·2	2·16	23·7	11·9	2·50	Welwyn.. [Hall	III.
1875 ...	10·2	3·76	37·5	13·2	3·95	Letheringsett	IV.
1876 ...	7·4	2·49	33·7	8·5	3·70	Cragside	X.
1877 ...	8·2	2·73	33·1	9·3	3·09	Wellington ...	VI.
1878 ...	10·2	3·05	30·0	11·8	3·90	Haverstock Hill	I.
1879 ...	10·9	3·31	30·5	12·3	3·80	Cambridge M. V	III.
Mean...	9·2	2·71	29·8	11·9	3·70	.....	...
1880 ...	9·5	3·06	32·3	11·7	3·34	Marmont Pr. L.	III.
Diff. ...	+·3	+·35	+·25	—·2	—·44	.....	...

TABLE V.—*Comparison of the Mean of all the Maximum Falls in 1880 with similar data for previous years.*

Years.	Number of Returns.	Mean Percentage.	Mean Amount.	Mean Total Fall in year.	1867 being Total Fall being assumed = 100.	Total Fall being assumed = 34 in. Mean Max. =
			in.	in.		
1865 ...	481	5·1	1·70	33	106	5·00 percent.
1866 ...	590	3·7	1·48	40	129	4·35 "
1867 ...	584	4·6	1·44	31	100	4·24 "
1868 ...	676	4·3	1·43	33	106	4·21 "
1869 ...	637	4·2	1·42	34	108	4·18 "
1870 ..	687	4·9	1·30	27	81	3·82 "
1871 ...	752	4·9	1·49	30	98	4·38 "
1872 ...	743	3·4	1·59	47	151	4·68 "
1873 ...	809	4·6	1·35	29	94	3·97 "
1874 ...	1010	4·4	1·41	32	103	4·15 "
1875 ...	1081	5·0	1·83	37	119	5·38 "
1876 ...	1112	3·9	1·49	38	123	4·38 "
1877 ...	1180	3·8	1·56	41	132	4·59 "
1878 ...	1186	4·3	1·49	35	113	4·38 "
1879 ...	978	4·2	1·52	36	116	4·47 "
Mean ...	834	4·4	1·50	35	112	4·41 "
1880 ...	1117	4·8	1·72	36	116	5·06 "
Diff.	+283	+·4	+·22	+1	+4	+·65 "

DRY PERIODS IN 1880.

THERE is nothing so difficult to settle as what is to be regarded as constituting a "dry period." But in spite of the general excess of rain in 1880, the year was noticeable for long periods of drought. The rain frequently falling very heavily for several successive days, and being followed by a long period with little or no rain. I have, therefore, felt it my duty to give some details respecting these dry periods, and I will explain how this has been done, and give the figures in full, together with some remarks upon them.

Thirty-nine daily records of the fall of rain during 1880 were taken from stations so selected as to fairly represent all parts of the British Isles.

From each of these records was extracted (1) "Absolute Droughts," or all periods of 14 or more consecutive days absolutely without rain; and (2) "Partial Droughts," or all periods of 28 days or upwards in which the total fall was less than a quarter of an inch.

The result of this extraction is given in the following table :—

STATION & COUNTY.	ABSOLUTE DROUGHTS.			PARTIAL DROUGHTS.		
	Began.	Ended.	Lasted.	Began.	Ended.	Lasted.
Maidstone (Hunton Court) <i>Kent</i>	March 8 Aug. 9	Mar. 30 Aug. 23	23 15	Jan. 1 Feb. 23 April 21 April 27	Jan. 5 Mar. 30 May 31 June 4	36 36 41 39
Winchester (Harestock) <i>Hampshire</i>	Jan. 17 Mar. 10 Aug. 9	Feb. 13 Mar. 30 Aug. 22	18 21 14	Jan. 2 April 22	Feb. 4 May 27	35 36
Aspley Guise (Oaklands) <i>Bedford</i>				Aug. 8	Sept. 10	34
Bury St. Edmunds (Barton) <i>Suffolk</i>	Mar. 5	Mar. 30	26	Jan. 1 Mar. 4	Feb. 6 Mar. 30	37 27
Sherborne <i>Dorset</i>	Mar. 10 Aug. 8	Mar. 29 Aug. 27	20 20			
Kilworthy Hill <i>Devon</i>	Jan. 17 Aug. 8	Feb. 2 Aug. 24	17 17	April 21	May 25	35

STATION & COUNTY.	ABSOLUTE DROUGHTS.			PARTIAL DROUGHTS.		
	Began.	Ended.	Lasted.	Began.	Ended.	Lasted.
Stroud (Upfield) <i>Gloucester</i>	Jan. 17 Mar. 9 April 23 Aug. 8	Feb. 4 Mar. 30 May 9 Aug. 22	19 22 17 15	Mar. 3 April 20 Aug. 8	Mar. 30 May 25 Sept. 4	28 36 28
Woolstaston <i>Shropshire</i>	Jan. 19 Mar. 15	Feb. 2 Mar. 29	15 15	Aug. 8	Sept. 9	33
Nuneaton (Caldecote House) <i>Warwick</i>	Jan. 17 Mar. 13	Feb. 2 Mar. 30	17 18	Aug. 8	Sept. 4	28
Boston (Grand Sluice) <i>Lincoln</i>	Jan. 17	Jan. 31	15	Jan. 1	Feb. 5	36
Over Darwen (St. James) <i>Lancashire</i>	Mar. 13 Aug. 9	Mar. 29 Aug. 28	17 20			
Tickhill (Sandbeck Park) <i>York, W.R.</i>	Jan. 19 Mar. 13	Feb. 4 Mar. 30	17 18	Jan. 1	Feb. 4	35
Whitby (Guisboro' Road) <i>York, N.R.</i>				Jan. 2	Feb. 5	35
Newcastle (Town Moor) <i>Northumberland</i>	Mar. 16	Mar. 30	15			
Keswick Post Office <i>Cumberland</i>	Jan. 16 Mar. 13 Aug. 7	Jan. 29 Mar. 29 Aug. 28	14 17 22	April 24 Aug. 7	May 21 Sept. 8	28 33
Cardiff Cemetery <i>Glamorgan</i>	Mar. 13	Mar. 30	18	April 23 Aug. 8	May 23 Sept. 4	30 28
Haverfordwest <i>Pembroke</i>	Aug. 15	Aug. 31	17	Aug. 8	Sept. 4	28
Aberystwith (Goginan) <i>Cardigan</i>	Jan. 17 Aug. 15 Oct. 8	Feb. 1 Aug. 31 Oct. 23	16 17 16			
Llandudno <i>Carnarvon</i>	Mar. 13 Aug. 8	Mar. 30 Aug. 31	18 24	April 25 Aug. 8	May 22 Sept. 9	28 33
Carsphairn <i>Kirkcudbright</i>	Mar. 13 Aug. 7	Mar. 29 Sept. 1	17 26	Aug. 6	Sept. 3	29
Wooplaw [Gulashiels] <i>Roxburgh</i>	Mar. 13	Mar. 30	18	Aug. 7	Sept. 8	33
Greenock (Hole Glen) <i>Renfrew</i>	Oct. 2	Oct. 16	15	Aug. 6 Sept. 25	Sept. 5 Oct. 23	31 29
Leden (Urquhart) <i>Fife</i>	Aug. 9	Aug. 22	14	April 22 Aug. 5	May 22 Sept. 3	31 30
Braemar <i>Aberdeen</i>	Mar. 14 Aug. 9	Mar. 29 Aug. 25	15 17	Aug. 9	Sept. 9	32

STATION & COUNTY.	ABSOLUTE DROUGHTS.			PARTIAL DROUGHTS.		
	Began.	Ended.	Lasted.	Began.	Ended.	Lasted.
New Pitsligo	Jan. 1	Jan. 14	14	July 31	Sept. 9	41
<i>Aberdeen</i>	Mar. 16	Mar. 30	15			
	Aug. 7	Aug. 21	15			
Strome Ferry	Mar. 12	Mar. 27	15			
<i>Ross</i>	May 5	May 19	15			
	Aug. 16	Sept. 2	18			
Alness (Ardross Castle)	Mar. 14	Mar. 30	17	Aug. 6	Sept. 5	31
<i>Ross</i>						
Fort William	Mar. 14	Mar. 27	14			
<i>Inverness</i>	Aug. 17	Aug. 31	15			
Watten				Aug. 6	Sept. 9	35
<i>Caithness</i>						
Cork (Blackrock)	May 12	May 26	15			
<i>Cork</i>	Oct. 8	Oct. 24	17			
Darrynane	Sept. 27	Oct. 18	22	Sept. 25	Oct. 24	30
<i>Kerry</i>						
Gurteen (Shinrone)	None			None		
<i>Tipperary</i>						
Inistiogue	Aug. 9	Aug. 25	17			
<i>Kilkenny</i>						
Balbriggan				April 23	May 25	33
<i>Dublin</i>				Aug. 9	Sept. 8	31
Galway (Queen's College)	Oct. 2	Oct. 23	22	Sept. 25	Oct. 24	30
<i>Galway</i>						
Sligo (Mount Shannon)	Aug. 9	Aug. 31	23	Aug. 8	Sept. 9	33
<i>Sligo</i>	Oct. 4	Oct. 18	15			
Belturbet (Redhills)	Aug. 10	Aug. 30	21	April 22	May 22	31
<i>Cavan</i>				Aug. 8	Sept. 9	33
				Sept. 22	Oct. 23	32
Banbridge (Miltown)	Aug. 8	Aug. 31	24	April 24	May 22	29
<i>Down</i>				Aug. 8	Sept. 9	33
Cardonagh	Aug. 9	Aug. 24	16			
<i>Donegal</i>						

REMARKS.

The conclusions deducible from the foregoing figures appear to be :

JANUARY 1ST TO FEBRUARY 4TH.

A general drought over the East of England, especially marked in Suffolk, including a rainless period of at least 14 days, from January

16th, even at some stations in the West of England, at Keswick, and in Central Wales.

FEBRUARY 23RD TO MARCH 30TH.

Thirty-six consecutive days with a total fall of less than $\frac{1}{4}$ in. at Maidstone ; at other stations this was shortened to

MARCH 16TH TO 29TH.

Scarcely a drop of rain in any part of England, Wales, or Scotland.

APRIL 24TH TO MAY 21ST.

A generally dry period of at least the above duration, and in some cases beginning as early as April 20th, and in others lasting until June 4th ; and averaging 33 days' duration. Stations rather scattered, but including three in Ireland.

JULY 31ST TO SEPTEMBER 9TH.

This long period (41 days) occurred only at New Pitsligo, in the North of Aberdeenshire ; at other stations it was curtailed into the following.

AUGUST 8TH TO SEPTEMBER 3RD.

This was the saving of the harvest of 1880. Broadly speaking, there was a month of dry weather from August 7th to September 7th, but at a few stations it was shortened as above. There were rainless periods of 20 or more consecutive days at one station out of each four, and of more than a fortnight at the majority of stations.

SEPTEMBER 25TH TO OCTOBER 23RD.

A dry period of very nearly a month at Greenock, Darrynane, Galway, and Belturbet—a remarkable fact, considering the time of year and the wetness of the localities ; at other stations this was shortened to

OCTOBER 2ND TO 24TH.

Rainless periods of from 15 to 22 days' duration occurred between the above dates in Wales, the West of Scotland, and in Ireland.

MONTHLY FALL OF RAIN IN 1880.

CONTINUITY is such an essential feature in rainfall work that we avoid, whenever it is possible, making the slightest change in the arrangement of this volume; and we never make a change without much previous consideration. This necessarily involves a certain degree of sameness and some repetition, but these are minor evils compared with the importance of ensuring the strict comparability of the data for successive years.

There is one slight change this year, but its effects are small and chiefly invisible. That is rather a quaint term to employ, but no other is so true, for the change is the substitution of the mean monthly fall (1870-79) for that of the years 1860-65, and the effect is invisible, because the only result is that the remarks on the distribution of rain during each month are based upon fuller information than in previous years. The information which we give respecting monthly rainfall is—

- (1) Reports on each month in the words of the observers given on pages [32] to [67].
- (2) The monthly values at 230 stations as equably distributed over the British Isles as the data at command will permit, the stations being as far as practicable good stations, with the gauges not more than 1 foot above the ground, and also as far as possible identical with the stations quoted in previous years.
- (3) A series of Maps showing for each month, for 40 representative stations, those at which the rainfall was more than 1 in. above the average, marked +; those at which it was within an inch above or below the average marked ●; and those at which it was more than an inch below the average marked —
- (4) Short notes based chiefly upon the above-mentioned data.

MONTHLY RAINFALL AT 232 STATIONS IN THE BRITISH ISLES DURING 1880.

ENGLAND.

Div.	County.	Station.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total.
I.	Middlesex	London (Camden Sq.)	.31	2.33	.79	2.15	.26	4.04	5.11	.45	4.04	5.78	1.85	3.17	30.28
"	"	Uxbridge (Harefield)	.37	2.39	.65	2.45	.38	3.93	4.66	.53	7.46	5.72	2.12	3.45	34.11
II.	Surrey	Guildford (Guildown)	.54	2.54	.90	1.58	.50	3.37	4.30	.66	6.22	5.04	1.84	3.11	30.60
"	Kent	Tenterden	.31	3.02	.69	1.96	.18	3.67	3.19	1.64	3.53	6.85	4.33	3.19	32.56
"	"	Hythe	.53	3.31	1.31	2.02	.46	4.00	4.59	3.71	4.25	10.25	6.65	5.13	46.21
"	"	Seven Oaks (River Hill)	.26	2.28	.50	1.85	.17	1.97	3.49	1.22	4.15	6.98	2.91	3.45	29.23
"	"	Faversham (Ospringle)	.22	2.93	.67	1.08	.19	3.07	2.50	1.53	3.49	7.56	3.28	3.36	29.93
"	Sussex	Worthing	.54	2.83	1.09	1.88	.45	1.44	3.31	2.22	4.71	6.60	3.62	4.22	32.91
"	"	Maresfield (Forest Lodge)	.57	3.42	1.16	2.02	.34	2.49	3.70	.89	3.89	7.16	4.26	3.53	33.43
"	Hants	I. of Wight (St. Lawrence)	.65	2.93	.91	1.76	.37	1.98	3.82	.57	5.25	8.34	5.25	5.28	35.93
"	"	Droxford	.64	3.59	1.00	2.79	.25	1.97	3.82	1.17	5.57	4.67	3.38	3.85	32.70
"	"	Basingstoke (Sherborne)	.58	5.28	1.42	2.01	.47	3.48	5.08	1.26	5.20	5.85	2.91	3.40	36.94
"	Berks	Newbury (Welford)	.47	4.12	1.81	2.04	.62	3.84	5.13	.62	4.26	5.53	2.57	3.44	31.45
III.	Herts	St. Albans (Bayfordbury)	.29	2.25	.91	2.29	.49	2.54	6.37	.68	2.53	4.46	2.17	2.91	27.89
"	"	Royston	.22	1.98	1.05	1.71	.64	3.48	4.54	1.14	3.28	4.87	2.17	2.31	27.39
"	Bucks.	High Wycombe	.37	3.62	1.10	1.88	.25	3.32	4.63	.75	4.00	5.02	2.32	3.37	30.63
"	"	Buckingham (Adstock)	.35	2.34	1.81	1.82	1.12	2.42	8.40	.68	3.89	5.11	2.16	2.37	32.47
"	Oxford	Oxford	.42	2.22	1.15	1.89	.77	4.18	5.05	.30	3.67	5.30	1.99	3.10	30.04
"	Northampton	Wellingborough	.44	3.01	1.21	1.68	1.28	2.53	7.06	1.13	4.45	5.39	1.95	3.27	33.40
"	Bedford	Bedford	.32	1.93	1.70	1.60	1.11	2.60	6.30	.77	5.64	5.00	1.80	2.03	30.80
"	Cambridge	Ely (Stretham)	.09	1.41	.90	1.33	.73	2.87	3.90	1.33	3.28	4.67	1.43	1.72	23.66
"	"	Wisbech	.12	2.04	1.21	2.48	.89	3.24	6.24	2.36	4.72	4.77	2.00	2.05	32.12
IV.	Essex	Waltham Abbey	.59	2.19	.98	2.21	.35	3.37	4.41	.60	3.36	5.21	2.12	3.22	28.61
"	"	Chelmsford	.15	1.50	.72	1.55	.67	3.00	5.24	.50	2.63	6.26	2.37	2.62	27.21
"	"	Rivenhall	.12	1.58	.56	2.52	.33	2.87	3.58	.71	2.72	6.14	2.32	2.24	25.69
"	Suffolk	Hadleigh Boxford	.10	1.27	.75	1.77	.81	2.51	3.93	1.18	3.22	4.82	2.33	2.39	24.58
"	"	Ipswich	.14	1.59	.81	1.31	.64	2.47	3.57	1.40	2.70	3.97	2.50	2.30	23.40
"	"	Saxmundham	.02	1.76	1.03	1.39	.51	2.81	3.93	2.44	2.44	4.43	3.01	2.39	26.16
"	"	Gedeston [Beccles]	.17	1.71	.80	1.64	.76	2.49	4.29	1.90	2.72	3.93	2.00	1.97	24.38
"	Norfolk	Swaffham	.12	1.82	.95	2.49	.59	5.53	6.19	2.86	3.86	4.93	2.11	3.04	34.49
"	"	Holt	.21	1.66	1.03	1.75	1.07	3.35	4.38	2.98	2.79	4.77	2.86	2.55	29.40

ENGLAND—(continued.)

Div.	County.	Station.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total.
V.	Wilts	Salisbury	.49	4.15	.76	1.90	.55	2.09	4.03	1.59	3.57	5.16	2.57	3.68	30.54
	"	Pewsey	.51	3.31	1.45	1.82	.70	2.02	4.43	1.17	3.49	4.85	2.53	3.40	29.68
	"	Trowbridge (Steeple Ashton)	.47	3.66	1.71	1.71	.93	1.75	3.70	.64	3.81	4.21	2.46	3.16	28.21
	Dorset	Weymouth (Osmington)	.77	4.09	1.50	2.18	1.30	1.61	3.53	.69	3.92	6.82	3.22	5.01	34.64
	"	Wimborne (Chalbury)	.47	3.74	.97	1.53	.87	2.31	3.81	1.65	3.31	5.12	2.57	4.22	30.57
	"	Shaftesbury	.77	4.52	1.21	2.56	1.52	2.88	4.38	1.20	3.68	6.66	3.19	4.67	37.24
	Devon	Kingsbridge	1.15	4.26	2.41	2.40	.57	1.60	3.22	.92	3.71	7.24	4.38	6.29	38.15
	"	Dartmoor (Lee Moor)	1.62	7.00	3.66	4.06	1.00	4.19	5.86	1.08	6.35	7.55	6.37	6.43	55.17
	"	Bovey Tracey	.89	6.52	3.36	2.26	.92	1.91	3.69	.84	3.47	8.20	5.05	5.08	42.19
	"	Cullompton (Bradninch)	.93	3.99	2.88	1.99	1.13	2.92	4.95	.56	3.63	5.47	2.77	5.10	36.82
	"	S. Molton (Rose Ash)	1.40	3.48	2.14	2.65	1.46	3.15	5.66	.96	5.04	5.50	3.69	5.91	41.04
	Cornwall	Penzance	1.27	4.64	3.16	2.69	1.54	1.68	3.84	.39	2.85	7.82	6.29	6.87	43.04
		St. Agnes	.60	4.07	2.16	2.11	1.79	2.20	3.48	.26	1.71	7.82	4.04	5.53	35.77
		Stratton (Week St. Mary)	1.02	4.76	1.79	2.41	1.73	1.77	5.27	.91	4.79	6.34	3.73	6.66	41.18
	Somerset	Ilminster	.91	5.82	1.45	2.59	1.96	1.30	3.59	.41	4.06	6.05	3.39	4.14	35.67
	"	Glastonbury (Street)	1.28	3.20	1.38	1.57	1.33	2.91	6.45	1.39	4.10	4.25	1.82	3.78	33.46
	"	Dunster	.77	5.05	2.72	1.77	1.20	2.47	3.70	.68	2.34	8.45	3.53	5.11	37.79
VI.	Gloucester	Clifton	.66	4.52	2.64	2.40	1.24	2.45	4.83	.41	3.66	6.00	3.09	5.47	37.37
	"	Stroud (Upfield)	.55	4.81	1.53	2.16	.74	2.91	5.60	.77	2.90	5.83	2.33	3.23	34.36
	"	Fairford (Hatherop Rec.)	.55	3.31	2.07	1.89	.75	3.97	5.44	1.42	3.80	5.23	2.67	4.01	35.11
	"	Moreton-in-Marsh	.43	4.16	1.28	2.37	.95	2.63	5.79	.57	3.92	5.23	1.98	3.15	32.46
	Hereford	Ross (Rocklands)	.57	4.81	1.32	1.98	1.67	3.16	6.80	.86	3.52	5.76	3.07	4.02	37.04
	Salop	Ch. Stretton (Woolstaston)	.59	2.92	1.53	2.11	2.79	3.07	5.42	.83	2.19	5.95	2.89	4.35	35.10
	"	Wellington	.68	2.34	.82	1.93	2.49	2.71	5.70	.89	3.01	4.80	2.15	3.47	30.93
	"	Oswestry	.51	2.98	2.41	1.70	2.49	4.22	6.96	2.50	2.16	6.25	4.17	4.69	41.04
	Stafford	Tamworth	.38	2.46	1.08	1.27	1.71	3.71	4.81	.97	3.82	5.34	1.70	3.23	30.48
	"	Burton (Horniglow)	.29	1.80	1.21	1.23	1.96	2.98	5.73	1.69	3.59	4.43	1.83	3.48	30.22
	"	Stoke (Rarlston)	.41	2.43	1.86	1.54	2.94	3.57	6.07	1.55	4.14	3.71	3.32	5.10	36.64
	Worcester	Malvern	.50	3.97	1.78	1.51	2.13	4.10	5.73	.29	3.94	5.10	2.34	3.18	34.57
	"	Tenbury (Orleton)	.48	4.05	1.52	2.12	2.71	4.17	5.08	.32	3.45	6.17	2.17	3.45	35.69
	"	Stourbridge (Longlands)	.63	3.12	1.21	1.53	1.93	3.85	6.33	.59	3.54	5.08	1.90	3.17	32.09
	Warwick	Learington (Blackdown)	.69	3.03	.99	2.08	1.20	2.26	6.33	1.40	4.51	5.03	1.97	2.81	32.35
	"	Wiley Rectory	.41	2.84	1.75	1.59	1.57	3.57	7.58	1.25	5.22	5.05	2.08	3.11	36.02
VII.	Leicester	Loughborough	.31	2.21	1.65	1.60	1.47	3.33	4.62	1.57	4.48	5.61	1.81	4.51	33.17
	"	Harston [Grantham]	.28	2.18	1.96	1.88	1.42	3.53	6.46	3.39	4.99	6.38	1.85	2.95	37.27

ENGLAND—(continued.)

Div.	County.	Station.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total.
VII.	Rutland.....	Oakham (Burley).....	71	231	102	250	134	447	568	127	418	700	200	239	3487
"	Lincoln	Horncastle.....	24	190	176	259	87	312	667	205	512	544	228	197	3401
"	"	Brigg (Appleby Vic.)	37	168	260	218	158	235	320	178	384	523	221	261	2963
"	Notts	Mansfield	39	221	230	128	178	430	613	246	464	586	291	316	3742
"	Derby.....	Buxton	114	741	410	250	376	417	794	276	558	579	574	843	5932
VIII.	Cheshire.....	Congleton(Buglawton Vic.)	59	276	179	190	247	407	625	214	367	305	334	525	3728
"	Lancashire.....	Manchester (Withington) .	60	209	214	117	252	254	576	281	422	262	321	497	3465
"	"	Ormskirk (Rufford).....	49	214	258	112	248	323	552	152	392	260	417	537	3514
"	"	Burnley (Brierfield).....	59	394	343	157	223	376	478	290	529	586	879	912	5226
"	"	Garstang (Vale House) ..	62	256	277	172	232	484	433	250	458	553	528	633	4338
"	"	Grange (Nutwood)	51	298	295	148	194	383	624	157	460	109	599	662	3980
IX.	York, W.R.	Rotherham	15	200	212	128	227	401	547	203	437	697	327	309	3613
"	"	Huddersfield (Dalton).....	24	296	285	187	284	286	558	171	438	633	324	406	3892
"	"	Leeds (Methley Park).....	54	220	204	290	260	252	647	207	502	510	192	304	3642
"	"	Pateley Bridge(Castlestead)	32	388	307	254	236	388	606	193	542	816	454	521	4737
"	"	Malham Tarn	63	469	437	304	212	647	822	324	554	309	679	1006	5826
"	York, E.R.	Pattingham.....	21	151	266	164	100	234	456	147	504	533	254	246	3076
"	"	Brantinghamthorpe	10	235	225	303	165	130	530	254	503	803	265	345	3768
"	"	Pocklington (Warter)	14	232	191	185	174	178	595	123	436	552	243	359	3282
"	York, N.R.	Ganton	27	245	204	276	214	219	340	198	641	668	252	318	3602
"	"	Northallerton	14	186	143	175	140	248	652	103	432	357	163	446	3059
"	"	Lockwood Beck	45	235	209	217	185	418	522	205	579	906	321	413	4255
X.	Durham.....	Darlington (South End) ..	37	162	110	226	146	145	511	175	466	508	243	363	3092
"	"	Hartlepool (Hart Res.) ..	28	111	76	248	127	151	443	219	362	420	216	322	2723
"	"	Wolsingham	59	330	134	275	206	318	535	210	524	699	316	471	4077
"	Northumberland	Haltwhistle(UnthankHall)	96	227	104	282	191	359	648	96	498	362	421	525	3809
"	"	Stamfordham	41	207	117	233	185	238	518	153	464	382	286	325	3149
"	"	Alwinton (Harbottle)	46	208	206	246	223	104	562	139	465	459	325	190	3173
"	"	Howick	51	199	201	122	148	155	305	74	494	366	402	363	2880
"	"	Borrowdale (Seathwaite)...	477	1707	716	989	662	968	1005	415	951	330	2270	1522	12012
"	Cumberland	Scalegby Hall	103	183	159	195	126	221	602	127	406	138	364	303	2927
"	"	Kendal	80	427	330	177	197	446	669	137	453	125	780	685	4506
"	Westmoreland	Kirkby Stephen	65	466	162	227	166	213	490	167	470	327	520	387	3660
"	"	Lowther Castle.....	91	533	207	269	34	406	483	129	401	160	399	142	3254

WALES AND THE ISLANDS.

Div.	County.	Station.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total.
XI.	Monmouth.....	Newport (Gold Tops).....	.68	3.87	2.51	1.92	1.55	2.82	6.83	.52	4.27	5.30	5.22	5.41	40.90
"	"	Abergavenny.....	.36	5.18	2.01	1.92	2.41	4.82	4.76	.39	3.47	5.95	3.43	4.77	39.47
"	Glamorgan.....	Cardiff.....	1.18	4.57	2.78	2.20	1.55	2.77	6.37	.50	3.89	4.90	4.24	6.85	41.80
"	"	Ystalyfera.....	.94	5.94	3.79	2.85	2.60	2.93	12.06	.81	4.13	5.11	8.19	8.67	58.02
"	Cardarthen.....	Cardarthen Asylum.....	.84	4.89	2.58	2.67	2.06	1.95	7.24	.81	4.33	4.68	4.72	6.83	43.60
"	Pembroke.....	Llandoverly.....	.82	4.99	3.07	2.99	2.75	3.23	9.59	.82	3.03	5.18	6.60	7.02	50.09
"	"	Stackpole Court.....	.76	3.72	2.84	2.63	1.94	3.57	3.91	1.44	2.92	6.43	4.16	6.45	40.77
"	"	Fishguard (Castle Hill) ..	.96	4.70	1.91	3.14	1.92	2.50	3.66	1.22	3.28	4.86	7.18	6.61	41.94
"	Cardigan.....	Aberystwith (Goginan).....	1.38	2.60	1.02	3.15	2.63	4.86	6.99	1.74	4.19	3.82	6.16	8.92	47.46
"	Brecknock.....	Brecknock.....	1.10	7.72	2.83	1.95	2.39	6.46	6.43	.54	2.39	6.75	5.46	4.85	48.87
"	Radnor.....	Rhayader (Nantgwilt).....	2.04	8.24	3.62	3.10	3.15	4.65	6.66	1.21	4.92	8.11	7.98	9.09	62.77
"	"	Presteign.....	.39	4.21	2.00	2.02	3.62	5.66	4.52	.60	3.05	6.86	2.89	4.78	40.60
"	Montgomery.....	Carno.....	1.48	4.27	2.52	2.82	2.71	3.88	6.44	2.06	2.90	6.71	6.26	8.91	50.96
"	Flint.....	St. Asaph (Nantllys).....	.75	1.64	1.63	1.12	1.87	3.46	6.38	1.50	2.84	6.19	3.31	4.95	35.64
"	Denbigh.....	Rosset (Trevalyn Hall) ..	.42	1.65	1.48	1.08	2.39	3.75	6.25	2.45	2.69	5.47	2.71	4.46	34.80
"	Merioneth.....	Dolgelly.....	1.68	6.31	1.89	4.13	2.81	4.67	8.76	2.98	4.78	4.49	8.37	9.63	60.50
"	"	Bala.....	1.15	5.95	4.23	2.81	2.75	2.81	8.43	2.30	3.83	4.84	8.68	7.21	54.99
"	Carnarvon.....	Port Madoc.....	1.55	2.90	2.63	2.32	2.21	4.04	8.40	2.64	5.30	5.18	7.58	9.02	53.77
"	Anglesey.....	Menaifron.....	1.41	2.38	2.43	2.18	1.52	3.25	6.09	2.41	3.20	4.53	4.73	5.45	39.63
"	Isle of Man.....	Douglas.....	.84	3.67	2.81	3.05	.82	2.20	4.66	.67	4.44	5.82	5.03	3.94	37.95
"	Jersey.....	Millbrook.....	.89	3.66	1.75	1.89	.43	1.69	2.61	1.33	6.41	10.73	3.76	4.48	39.63
"	Guernsey.....	Grange Road.....	1.04	4.64	1.85	2.39	.23	1.58	2.87	.55	5.19	10.44	5.81	7.10	43.69

SCOTLAND.

XII.	Kirkcudbright ...	Colvend.....	.95	3.85	2.30	2.48	1.25	2.09	4.09	.85	2.90	.77	4.30	2.24	28.07
"	"	Dalbeattie.....	.86	3.88	2.54	3.61	1.93	2.40	3.58	.62	3.36	1.18	5.75	3.87	33.58
"	"	Carsphairn.....	2.71	7.67	3.33	5.83	2.62	2.78	4.25	.55	4.61	2.32	7.04	4.69	48.40
"	Dumfries.....	Annan (Warmanbie).....	.68	3.13	2.08	3.05	1.47	1.81	5.57	.42	4.75	1.09	5.98	3.40	33.43
"	"	Moffat (Ericstane).....	3.00	7.60	2.90	6.60	2.00	1.70	2.20	1.10	6.40	2.10	7.70	3.70	47.00
"	Roxburgh.....	New Castleton (The Flatt).....	2.30	4.00	2.30	2.60	1.70	1.90	4.90	.70	3.80	1.90	7.20	3.30	36.60
"	"	Hawick (Braxholme).....	1.28	3.27	1.26	3.05	1.18	1.07	5.03	.78	4.26	3.06	4.98	4.19	33.41
"	"	Jedburgh.....	.65	1.77	1.69	1.86	1.53	1.88	3.64	.54	3.55	3.29	3.85	2.83	27.08
"	"	Glenashields.....	.77	2.89	2.04	2.79	.71	1.27	4.64	.40	3.94	2.83	4.29	2.85	29.42
"	"	Glenrath.....	1.65	4.73	2.13	4.78	1.02	1.94	3.50	.61	5.35	2.70	6.73	2.13	37.27
XIII.	"	Penicuik.....	1.15	3.40	2.30	3.80	1.30	1.85	2.95	.66	5.16	3.70	6.30	4.85	36.90

SCOTLAND—(continued.)

Div.	County.	Station.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total.
XVII.	Nairn	Nairn (Achareidh)	1.28	1.34	.93	1.21	.70	1.42	4.56	.28	1.13	4.03	3.29	2.58	22.75
XVIII.	Ross	Loch Alsh (Inverinate)	9.16	10.02	5.30	5.95	2.65	3.42	4.08	4.38	6.94	4.81	10.31	2.73	69.75
"	"	Strathconan	4.87	5.37	3.30	2.82	2.71	2.40	5.07	1.26	2.09	3.51	6.98	6.36	46.54
"	"	Braemore House	6.57	5.35	2.24	2.07	1.78	2.70	6.37	.93	1.30	4.51	5.43	3.60	42.85
"	"	Invergordon	2.63	1.29	1.14	1.38	.69	2.62	5.09	.41	1.91	1.83	3.66	2.84	25.49
"	Inverness	Skye (Sligachan)	6.25	25.58	5.19	6.58	6.03	4.07	2.15	2.68	6.13	2.03	12.42	7.51	86.62
"	"	Farraline	3.50	3.00	4.30	4.50	3.20	7.60	2.00	2.10	4.30	4.30	6.20	2.00	47.00
"	"	Glenstrathfarrar	5.11	5.93	3.43	3.25	2.68	2.98	3.49	1.14	2.38	4.49	8.09	6.53	49.50
XIX.	"	Invershin	.63	2.89	.80	3.07	1.13	3.19	4.17	.27	2.05	2.04	3.87	5.56	29.67
"	"	Assynt (Achumore)	6.10	8.30	1.00	2.80	3.30	5.50	9.90	1.80	5.20	8.40	9.20	13.80	75.30
"	"	Forsinard	2.59	4.35	1.93	2.24	1.59	3.60	4.23	.55	2.94	6.27	4.91	5.16	40.36
"	Caithness	Wick Station	1.22	1.48	1.67	1.18	1.29	1.90	2.55	.34	3.63	3.09	3.35	6.45	28.15
"	Shetland	East Yell	2.12	5.70	3.18	2.67	2.54	1.04	1.46	1.32	5.37	3.62	5.42	4.24	38.68

IRELAND.

XX.	Cork	Cork (Black Rock)	1.85	5.22	3.58	3.10	.87	2.09	1.84	1.16	1.96	2.72	5.72	3.41	33.52
"	"	Fermoy (Glenville)	1.98	5.84	3.63	3.61	1.36	4.30	4.58	1.64	2.61	3.34	5.72	3.83	42.44
"	Kerry	Darrynane	2.97	5.67	2.04	3.20	1.64	5.06	3.38	2.90	5.90	1.83	4.65	3.99	43.23
"	"	Dromore Castle	2.15	7.48	3.52	4.91	1.36	4.53	4.89	3.11	3.50	4.00	5.55	6.62	51.62
"	"	Cara, Lake Side	2.52	8.01	2.00	4.59	1.21	4.11	5.35	2.53	4.36	3.12	6.70	5.27	49.77
"	Waterford	Waterford Gas Works	1.07	4.34	4.26	3.82	1.06	1.66	6.39	1.41	2.31	4.36	4.52	3.00	38.20
"	Tipperary	Clonmel	1.41	6.75	2.38	4.32	1.47	2.37	4.13	1.30	2.35	3.80	4.90	3.56	38.74
"	"	Tipperary, Henry Street	.90	4.11	2.44	4.11	2.40	2.01	6.04	1.60	2.84	2.78	3.28	4.74	37.25
"	"	Nenagh (Castle Lough)	1.20	3.23	4.23	4.16	1.79	3.21	5.52	1.80	2.14	2.37	5.43	4.23	39.31
"	"	Gurteen	.97	2.55	3.74	3.57	1.49	3.18	5.71	2.16	2.16	2.25	3.66	2.00	34.44
"	Limerick	Janeville	.64	6.09	2.52	3.39	2.52	2.92	4.90	2.15	1.85	3.41	3.20	4.70	37.59
"	Clare	Ennis	1.43	2.04	3.82	2.76	1.16	3.41	4.96	2.59	2.96	1.06	5.40	4.43	36.02
"	"	Miltown Malbay	1.79	4.35	3.84	3.51	1.68	5.38	5.02	2.45	3.67	1.50	5.84	4.73	43.76
XI.	Wexford	Ballyhyland	1.26	4.68	4.17	3.91	1.09	2.66	6.65	2.30	3.71	5.67	4.39	1.15	44.64
"	"	Gorey (Courtown)	.88	3.29	5.08	2.83	1.08	2.62	3.41	2.58	3.84	7.31	3.16	3.05	39.13
"	Kilkenny	Tullagher	1.81	4.97	5.16	3.52	.92	2.20	7.09	1.70	3.04	3.80	4.79	3.61	42.61
"	"	Stoneyford (Ennisnag)	.79	4.02	3.15	2.52	.72	1.43	4.27	2.10	2.45	3.06	3.26	3.12	30.89
"	Wicklow	Delgany (Innismore)	1.15	3.89	4.11	2.80	.60	1.82	5.81	2.28	2.42	7.56	3.22	3.72	39.45
"	Carlow	Brown's Hill	.90	4.07	4.18	2.91	.75	2.15	5.13	2.35	2.79	2.94	3.23	3.43	34.81
"	Queen's Co.	Abbey Leix, Blandsford	.71	3.30	4.54	3.34	.99	1.44	5.33	2.61	1.89	4.31	4.00	3.39	35.89

IRELAND—(continued.)

Div.	County.	Station.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total.
XXI.	King's Co.	Clonbrin	·96	2·14	4·96	2·92	1·21	3·05	5·14	1·82	2·55	3·59	3·15	3·44	34·93
	"	Tullamore	1·12	1·31	2·42	2·60	·89	4·09	7·03	1·91	2·21	2·11	3·30	3·18	32·17
	Dublin	Glassevin Botanic Gardens	·59	2·47	3·55	1·82	·46	2·70	6·26	1·15	2·18	8·16	3·90	3·16	36·40
	"	Balbriggan	·93	2·14	3·60	2·42	·49	2·22	6·43	1·07	2·36	6·44	3·25	2·53	33·88
	"	Trim	·93	2·10	3·98	2·97	·81	2·37	6·11	1·09	1·55	4·75	2·87	2·07	31·60
	Westmeath	Athlone	1·00	3·21	3·89	4·26	1·03	6·09	6·28	1·78	2·66	1·37	5·07	3·51	40·15
	"	Mullingar (Belvedere)	·79	2·77	3·63	3·30	1·36	3·47	6·90	1·26	2·60	2·91	5·22	3·15	37·40
	Louth	Stephenstown	·83	2·20	2·66	3·56	·51	3·52	5·50	1·17	2·12	1·37	3·03	2·49	28·92
	Galway	Cregg Park	1·23	2·99	2·81	3·36	1·36	4·44	6·39	2·06	2·59	1·04	5·11	3·65	37·03
	"	Ballinasloe	·88	2·94	4·02	3·69	1·53	3·85	5·81	2·30	2·17	1·09	5·30	3·09	36·67
XXII.	"	Clifden Kylemore	8·88	8·98	6·16	7·49	4·27	7·84	4·64	3·07	5·02	2·17	10·98	7·50	77·00
	"	Tuam	1·62	4·35	3·57	3·84	1·55	5·09	4·86	2·26	3·14	1·47	6·15	3·81	41·71
	"	Ballinrobe	3·29	4·48	3·61	4·63	1·46	3·56	3·13	1·22	2·91	·39	6·53	4·29	39·50
	"	West Port (Old Head)	3·15	7·40	2·35	4·50	2·65	4·10	3·30	2·00	2·20	1·50	9·50	5·80	48·45
	"	Crosmolina (Enniscoe)	3·46	5·69	3·90	4·99	2·15	3·24	3·89	2·90	3·49	1·90	9·07	3·32	48·00
	Sligo	Sligo (Mount Shannon)	1·97	2·27	2·00	3·33	1·80	4·93	6·00	1·59	3·15	·66	4·39	5·21	37·30
	Letrim	Carrick-on-Shannon	1·65	3·76	1·95	3·53	1·40	2·88	5·17	2·09	2·72	·38	4·85	1·88	32·26
	"	Killishandra (Drummany)	1·19	2·21	2·61	3·82	1·22	3·64	6·02	1·54	3·25	1·50	4·67	2·65	34·32
	"	Lough Allen (Dowra)	1·78	2·82	2·03	3·97	2·19	5·13	4·76	1·74	2·89	·79	4·76	4·20	37·06
	"	Enniskillen (Lisbellaw)	1·88	3·17	2·62	3·50	1·03	5·31	4·09	1·47	3·51	·81	4·62	3·09	35·10
XXIII.	Cavan	Rockcorry	1·08	2·78	2·11	4·22	·89	2·57	5·39	1·09	3·03	·59	3·99	2·91	30·65
	"	Armagh	1·38	2·53	1·99	4·01	1·05	4·31	5·82	1·07	3·57	1·05	3·16	2·71	32·65
	"	Newcastle (Fairleigh)	2·45	3·79	4·48	6·65	·97	1·64	4·33	·78	4·30	2·69	5·08	3·03	40·19
	"	Newtownards	·85	2·24	1·88	3·56	·97	1·41	7·28	·71	3·07	1·77	2·73	2·40	28·87
	"	New Barnsley	1·47	2·59	2·14	4·57	1·31	2·13	7·00	·69	3·70	1·41	3·65	3·51	34·17
	"	Ballymena	2·15	2·92	2·43	4·30	1·42	2·50	4·66	1·85	3·78	1·72	4·59	3·69	36·01
	"	Bushmills	2·05	2·08	1·57	2·62	·94	3·19	4·49	2·48	3·29	2·33	3·73	3·98	32·75
	"	Newtown Linavady	1·96	2·44	2·25	3·12	1·34	2·35	5·14	1·14	2·79	2·01	4·67	3·41	32·62
	Donegal	Inver Glebe	4·72	2·34	5·15	3·62	1·77	5·46	4·14	1·53	2·54	·78	6·90	3·85	42·80
	"	Ramelton	2·92	2·73	2·27	3·92	1·72	3·01	4·90	·94	3·62	2·19	5·57	3·49	37·28
	"	Carndonagh	2·26	3·20	2·39	3·43	1·85	2·91	4·86	1·54	3·51	2·52	7·57	5·35	41·39

NOTES UPON THE MONTHLY FALL IN 1880.

JANUARY.

An extremely dry month everywhere except in the North-West of Scotland. In England the fall was below an inch at all stations, except those in the South-Western Counties and a few stations in Derbyshire and Cumberland. In Cambridge, Essex, Suffolk, and along the East Coast as far as the Humber, there are many stations at which the fall was less than $\cdot 10$ in., and several with less than $\cdot 05$ in.

FEBRUARY.

Rather more than the average amount of rain fell in this month, but no remarkable excesses are reported. The excess was chiefly in the South-West of England and in the West of Scotland; the fall being above 10 inches at several stations in Argyllshire and in West Invernesshire.

MARCH.

A month of nearly average rainfall, but rather drier than usual in the South-East of England and the North-East of Scotland.

APRIL.

Another month of nearly average fall, the only marked excesses being in the North of Ireland and the South-West of Scotland.

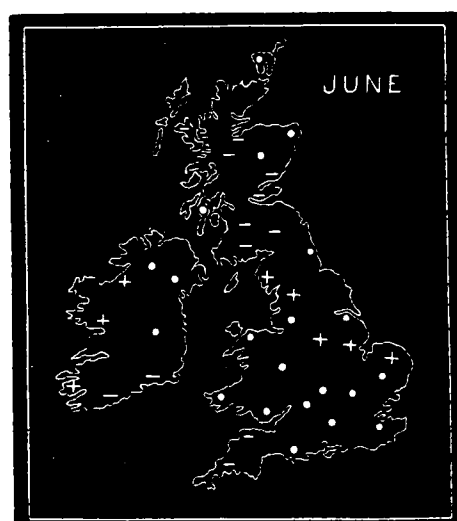
MAY.

Dry everywhere, especially in the South of England, and in some parts of Ireland. At many stations in the South-East of England the total fall was less than a quarter of an inch.

JUNE.

The distribution of rain in this month was rather irregular. Taking the whole of the British Isles it was rather below the average, but this deficiency arose chiefly in the South-West of England, the South-East of Ireland, and in Scotland. There was an excess at some stations in Leicestershire and adjoining counties, in the neighbourhood of the Wash, and also at stations in the Western Counties of Ireland.

MONTHLY MAPS OF RAINFALL, 1880



For explanation see page [116].

MONTHLY MAPS OF RAINFALL, 1880



For explanation see page [116].

JULY.

A very wet month ; the fall above the average at every station in England and Wales, and at all those in Scotland except two on the West Coast, viz., Kilmory, in Argyllshire, and Portree, in the Isle of Skye ; and one in the Shetland Isles, in the extreme North. The fall was in excess at all the Irish stations, except two in the extreme South-West.

AUGUST.

An extremely fine and dry month. At only one station (out of the forty typical ones) was the fall above the average, and at it (Cossey, near Norwich) the excess was very slight, and due to thunderstorms.

SEPTEMBER.

In this month the distribution of rain was very irregular. On the whole there was an excess at Eastern stations, both in England and in Ireland, and a deficiency at the Western stations in both countries. In Scotland there was generally less than the average fall.

OCTOBER.

The features of the distribution of rain in this month are very strongly marked. There was a considerable excess in all parts of England, and especially in Guernsey and Jersey ; but in the Lake District the fall was below the average. There was about the average fall in Wales, and the fall was either near to or below the average in all parts of Scotland and Ireland. It was a dry month in Stirling and Perth, and also in the Western Irish Counties of Clare, Mayo, Sligo, Leitrim, and Fermanagh.

NOVEMBER.

There was nothing very noteworthy in the fall of this month. In England it was generally near the average, but rather above it in the North-Western Counties. It was above the average in the South and West of Scotland, and near the average in other parts. It was also nearly of the usual amount in Ireland—slightly in excess.

DECEMBER.

On the whole an average fall. Above it in the West of England, most parts of Wales, and in the S.E. of Scotland ; below it in central Scotland and in the S.W. of Ireland.

ON THE RELATION OF THE RAINFALL OF VARIOUS RECENT PERIODS TO THE AVERAGE OF THE THIRTY CONSECUTIVE YEARS, 1850-79.

THERE is no point in the study of rainfall of greater interest and practical utility, than the accurate determination of the average annual fall. And this is due not merely to the utility of the knowledge of the true mean fall as such, but also to the fact that other important facts, such as the average fall in three consecutive dry years and in one very dry or one very wet year, bear relations to the mean fall, which though not known with precision, are believed to be so approximately. The fall in three consecutive dry years is generally assumed to be about one-sixth less than the average, say 80 to 85 per cent of the mean ; the fall in one dry year is only from 60 to 70 per cent. of the mean, and in one wet year the fall may be 40 per cent. or (as in 1872, and in 1880 at some stations) even more above the mean.

This being the case, no trouble should be spared in endeavouring to obtain as accurate a mean value as possible. Here, however, we come upon difficulties, amid which the consideration of opposing claims becomes necessary.

The longer the series of years employed, the more near to absolute accuracy ought to be the average obtained ; but the longer the period the fewer will be the records available—*e.g.*, the number of stations (excluding lighthouses) of which I have perfect records for the 20 years 1860-79 is 182, but of these only 40 extend back to 1850, and not half that number go back to 1840.

The larger the number of stations, the more accurate will be conclusions respecting the geographical distribution of rain based upon them, because the more nearly perfect will be their geographical distribution.

These rival claims cannot be reconciled, but I believe the best result will be obtained by dividing the enquiry into two parts.

In the following table records extending over at least thirty years are alone used, and the rainfall of the three decades 1850-9, 1860-9, and 1870-9, are compared with the average of the thirty years 1850-79. A similar comparison is also made with the period 1860-5, which has often been used both in these pages and in the *Meteoro-*

logical Magazine, because it was believed to give a fairly close approximation to the truth, and because when first used it was the only period for which a large and well distributed series of records were available. More recently the period 1867-76 was used, it having been selected for very similar reasons, and its relation to the thirty year average is also shown in the table.

I showed nearly twenty years ago, in the *British Association Report* 1862, and in several articles in different volumes of *British Rainfall* have subsequently further proved, that the fall of rain over the British Isles during the ten years 1850-9 (although this period included the wet year 1852) was 5 per cent. below the average; the present table makes it 93 per cent of the mean, or 7 per cent. below the average.

In *British Rainfall* 1872, page 27, I showed that the fall during the decade 1860-9 was about 1 or $1\frac{1}{2}$ per cent. above the mean, which agrees closely with the result of the present investigation. Lastly, we find that the fall in the decade 1870-9 has been equal to, or above, the mean of the thirty years at every station, except Seathwaite in Borrowdale, Cumberland, and that on the average the excess has been about 5 per cent.

Tried by the same test, the average for 1860-5 comes out exactly the 30 year mean, and the average for 1867-76 2 per cent. above it.

To my mind these results are eminently satisfactory in every respect but one. It could not be other than gratifying to any one to find that work done nearly twenty years ago, in the infancy of rainfall work, stands so well the rigorous criticism to which it is now possible to subject it. That, however, is not a part of the subject upon which it is needful for me to dwell.

The unsatisfactory feature in the case is one which I have foreseen for some years, and which it does not seem easy to avoid. Many of my readers will remember the wet year, 1872, and some may also recollect that, in writing the account of it in *British Rainfall*, 1872, I pointed out how seriously those heavy yearly totals must disturb any comparatively short period of which that year formed a part. 1872, of course, formed a part of the period, 1870-79, and accordingly we have the mean for those ten years 5 per cent. above the mean of the thirty years, and as that thirty years is itself slightly thrown up by 1872, we should probably be correct in taking 1870-79 at 6 per cent. too high. However, let it stand at 5 per cent. too high. In what way this is a serious difficulty will be seen in the next paper.

COMPARISON OF THE RAINFALL DURING VARIOUS PERIODS WITH THE AVERAGE OF THE THIRTY YEARS, 1850-79.

		MEAN ANNUAL RAINFALL.										MEAN RATIO, 1850-79, BEING 100.			
Dist.	COUNTY.	STATION.	1850-9.	1860-9.	1870-9.	1860-5.	1867-76.	1850-79.	1850-9.	1860-9.	1870-9.	1860-5.	1867-76.		
I.	Middlesex	Camden Square	(24.30)	in. 25.68	in. 27.24	in. 25.01	in. 25.14	in. 25.74	94	100	106	97		98	
II.	Kent	Greenwich Observatory	24.95	25.18	25.39	23.90	24.39	25.17	99	100	101	95		97	
"	Sussex	Chichester (Chilgrove)	32.23	33.22	35.03	32.77	33.38	33.49	96	99	105	98		100	
III.	"	Uckfield Observatory	30.03	31.24	31.02	31.50	29.59	30.76	98	102	101	102		96	
"	Herts	Berkhamstead	28.05	29.28	31.33	28.02	30.03	29.55	95	99	106	95		102	
"	"	Hitchin	24.72	23.92	25.67	23.25	24.24	24.77	100	97	103	94		98	
"	Bucks	High Wycombe	23.20	25.71	25.87	24.29	25.49	24.93	93	103	104	97		102	
"	Northants	Althorp	20.34	23.35	26.93	21.77	26.10	23.54	87	99	114	93		111	
"	Bedford	Cardington (8 in. gauge)	21.60	22.49	25.13	21.87	23.61	23.07	94	97	109	95		102	
IV.	Norfolk	Norwich (Honingham)	25.99	23.98	27.31	23.28	25.80	25.76	101	93	106	91		100	
"	"	Holkham	26.13	23.88	26.21	23.10	25.54	25.41	103	94	103	91		101	
V.	Devon	Exeter Institution	26.91	31.76	34.69	30.17	34.70	31.12	86	102	112	97		111	
"	Cornwall	Bodmin	43.48	47.71	52.02	46.12	50.45	47.74	91	100	109	97		106	
VI.	Shropshire	Shifnal (Haughton Hall)	24.02	24.87	30.69	23.74	28.38	26.53	90	94	116	90		107	
"	Worcester	Orleton	28.82	30.90	33.26	30.06	31.92	30.99	93	100	107	97		103	
VII.	Lincoln	Spalding, (Pode Hole)	23.38	25.34	24.82	25.11	25.00	24.51	96	103	101	102		102	
VIII.	Lancashire	Bolton (The Folds)	44.01	48.98	47.23	48.33	46.40	46.74	94	105	101	103		99	
"	"	" (Belmont)	51.19	56.61	59.91	55.70	56.56	55.90	92	101	107	100		101	
"	"	Ormskirk (Rufford)	33.24	35.00	36.65	34.81	34.79	34.96	95	100	105	99		99	
"	"	Stouyhurst	43.40	48.56	48.74	49.08	48.34	46.90	93	103	104	105		103	
"	"	Holker	39.17	45.63	45.13	44.98	45.12	43.31	91	105	104	104		104	
IX.	York, W.R.	Rednuires	37.86	39.68	42.80	37.89	40.63	40.11	94	99	107	94		101	
"	"	Standedge	49.58	53.70	51.64	52.17	50.75	51.64	96	104	100	101		98	
"	"	Leeds (Holbeck, M. & Co.)	20.91	22.85	25.02	21.98	23.14	22.93	91	100	109	96		101	
X.	Northumbland	Whittle Dean	22.96	25.42	27.75	25.08	26.04	25.38	91	100	109	99		102	

ON THE RAINFALL OF 1880 AS COMPARED WITH THE AVERAGE 1870-9.

Now we come to our second table embracing (for reference) the two ten-year periods, 1860-9 and 1870-9, but being essentially a comparison of the fall in 1880 with the average 1870-79.

In the first place, perhaps, it is permissible to call attention to the unique character of this table. It contains the records from very nearly 200 stations, at not one of which has there been, to my knowledge, the slightest interruption of the observations during twenty-one consecutive years. No country in the world can produce anything like such a collection of perfect registers, and the British observers are entitled to be proud of the fact.

But I said that there was a difficulty, and it lies in this, that it seems irregular to use the 1860-9 average now that we have the later one worked out, and it would certainly lead to many complaints and to considerable adverse criticism ; and yet, on the other hand, as the 1870-9 average is 5 per cent. too high, we shall have to iterate and reiterate the necessity of remembering this fact whenever this table is used. Looking down the ratio column for 1870-9 of the table on pages 128-9, I should personally prefer to have made the columns on pages 133-6 run as follows :—

DIV.	COUNTY.	STATION.	AVERAGE.		DEPTH in 1880.	Diff. from assumed true mean.	
			1870-9	1870-9 —5 p.c.		Amount	Per cent
I.	Middlesex...	Camden Square..	in. 27·24	in. 25·88	in. 30·28	in. 4·40	+17

But those who have not worked hard at rainfall calculations are often incredulous when any corrections are applied, and as the point is not an essential one, I do not think the matter worth fighting for. Readers must, however, distinctly understand that if they wish to know the difference between the fall in 1880 and the true average,

they must add about 5 per cent. to all the + values in the last column of the following table, and deduct the same amount from the — ones.

The map which we give as the frontispiece to this volume shows so plainly the relation of the rainfall in all parts of the British Isles to the average of 1870-9, that detailed remarks are unnecessary.

It must be distinctly understood that the object of that map is to show the districts in which the rainfall of last year exceeded or fell short of the average for each locality; to show, in short, where it was a wet year and where it was a dry one, as compared with the average of the previous ten years at each spot. As stated on the map, the round dots show that the fall at the station so marked was within 10 per cent. of the average. The — and + marks that it was between 10 and 25 per cent. below or above the average; and the — and + in rings show that at the stations so marked, the fall was at least 25 per cent. below or above the average. This last is a very considerable departure from the average, and yet we find that it prevailed in 1880 over a *large* portion of central England, from the Thames to the Humber. An excess of 33 per cent. has been suggested as the definition of one very wet year, but, even compared with the high average of 1870-79 (itself, as we have seen, 5 per cent. too high), we have several records reaching or passing this limit, *e.g.* :—

			Average 1870-9. in.	Depth in 1880. in.	Diff. from average 1870-9. in.	
IV.	Norfolk	 Hunstanton	23·26	31·05	7·79	+33
VII.	Leicester	 Harston [Grantham] ...	26·90	37·27	10·37	+39
	"	 Belvoir Castle	25·75	35·38	9·63	+37
	" Lincoln	 Stamford(Barn Hill Ho.)	24·40	33·74	9·34	+38
	"	 Bourne (Wytham)	23·23	31·24	8·01	+34
	"	 Spalding (Pode Hole) ...	24·82	37·12	12·30	+50
	"	 Stockwith	23·20	31·98	8·78	+38
	" Nottingham...	Southwell (Oxton)	28·11	38·00	9·89	+35
	"	 Worksop	25·63	35·69	10·06	+39
	"	 Retford	23·04	32·57	9·53	+41
	"	 " (Babworth)	25·57	34·23	8·66	+34
	" Derby	 Kilnarsh (Norwood).....	26·79	35·93	9·14	+34

When we look at these figures and at the same time remember the frequent sequences of two or three days of excessive rain, and the long periods of drought, there is little difficulty in understanding that the year 1880 must have been under almost any conceivable conditions of river conservancy characterised by floods in the Midland counties of England.

In Scotland and in Ireland the year was dry ; as exceptionally dry near Dumfries in Scotland as it was wet in central England.

		in.	in.	in.	
XII.	Kirkcudbright Cargen [Dumfries]	46·65	30·77	15·88	—34
:	„ Dumfries	41·84	27·02	14·82	—35
:	„ „ Durrisdeer (Drumlanrig)	52·97	33·80	19·17	—36

Hitherto we have always had much difficulty in determining the relation of the fall of individual years to the average in Ireland, owing to the paucity of stations of which the average fall was known. The present table shows a slight improvement, as it includes six Irish returns, each perfect for the twenty years 1860–79. But we are rejoiced to say that there are thirty-six Irish stations of which the records are perfect for the decade 1870–79, and also for 1880. Several of these have been utilized for the map which forms the frontispiece, and all have been worked up in order to ascertain that those inserted on the map are fairly typical. This they undoubtedly are, but it seems tolerably certain that the 1880 record in the twenty-year table, from the Royal Institution at Cork, is, from some cause or other, not comparable with the records of earlier years at that station. The dryness of 1880 in the South-West of Ireland was greater than is indicated by that record. Too many of the gauges in Cork are at great heights above the ground. A good gauge at the usual height is much needed in that city.

**COMPARISON OF THE RAINFALL OF THE YEAR 1880,
WITH THE AVERAGE OF THE YEARS 1870-79.**

Div.	COUNTY.	STATION.	Average.		Depth in 1880.	Difference from average, 1870-9.	
			1860-9.	1870-9.		Amount.	Per cent.
			in.	in.	in.	in.	
I.	Middlesex ...	Camden Square	25·68	27·24	30·28	3·04	+ 11
II.	Surrey	Weybridge Heath	25·05	26·18	29·52	3·34	+ 13
"	"	Seething Wells	26·55	25·73	29·86	4·13	+ 16
"	"	Wimbledon	23·48	25·11	31·26	6·15	+ 25
"	"	Kew Observatory	23·28	24·76	28·73	3·97	+ 16
"	Kent	Maidstone (Hunton Ct.)..	26·00	26·06	26·87	·81	+ 3
"	"	Charing (Otterden).....	29·09	31·02	32·00	·98	+ 3
"	"	Greenwich (Roy. Obser.)	25·18	25·39	29·68	4·29	+ 17
"	West Sussex.	Chichester (Westgate) ...	28·16	29·51	31·29	1·78	+ 6
"	"	Arundel (Dale Park) ...	33·73	33·81	36·12	2·31	+ 7
"	"	Chichester (Chilgrove) ...	33·22	35·03	37·52	2·49	+ 7
"	East Sussex..	Lewes (Glynde Place) ...	33·65	33·75	29·49	4·26	- 13
"	"	Uckfield	31·24	31·02	31·79	·77	+ 2
"	"	Maresfield (Forest Lodge)	31·48	33·37	33·43	·06	+ 0
"	Hampshire ...	Osborne	30·73	29·21	29·45	·24	+ 1
"	Berkshire ...	Newbury (Welford)	28·97	31·92	34·45	2·53	+ 8
"	"	Long Wittenham	27·38	27·24	35·12	7·88	+ 29
III.	Herts	St. Albans (Gorhambury).	27·85	29·07	34·99	5·92	+ 23
"	"	Berkhampstead	29·28	31·33	36·12	4·79	+ 15
"	"	Hertford (Bayfordbury)..	25·01	27·02	27·89	·87	+ 3
"	"	Tring (Cowroast)	27·59	30·62	34·99	4·37	+ 14
"	"	Hitchin	23·92	25·67	28·88	3·21	+ 13
"	"	Royston	23·57	23·74	27·39	3·65	+ 15
"	Buckingham.	High Wycombe	25·71	25·87	30·63	4·76	+ 18
"	Oxford	Banbury (High Street) ..	26·22	28·51	32·43	3·92	+ 14
"	Northampton	Northampton (Althorp)..	23·35	26·93	32·93	6·00	+ 22
"	"	Wellingborough	24·09	25·72	33·40	7·68	+ 30
"	Bedford	Cardington	22·49	25·13	30·13	5·00	+ 20
"	"	"	... 3 ft. 21·76	23·69	28·70	5·01	+ 21
"	"	"	... 36 ft. 18·17	20·58	25·95	5·37	+ 26
"	Cambridge...	Ely (Stretham)	20·61	23·11	23·66	·55	+ 2
IV.	Essex	Baintree (Bocking)	23·98	26·20	27·86	1·66	+ 6
"	Suffolk	Bury St. Ed. (Westley)...	23·52	25·51	26·22	·71	+ 3
"	"	" (Barton)	23·68	25·71	28·30	2·59	+ 10
"	"	" (Culford)	24·84	26·20	27·92	1·72	+ 6
"	"	Carlton Colville	24·29	26·42	26·00	·42	- 2
"	Norfolk	Downham (Fincham) ...	23·14	27·00	30·88	3·88	+ 14
"	"	Norwich (Honingham)...	23·98	27·31	29·91	2·60	+ 10
"	"	" (Cossey)	24·04	27·44	27·69	·25	+ 1
"	"	Holkham	23·88	26·21	29·20	2·99	+ 11
"	"	Hunstanton	19·56	23·26	31·05	7·79	+ 33
V.	Wiltshire ...	Heytesbury (Chittern) ...	29·28	30·53	30·53	0·00	0
"	"	Swindon (Pen Hill)	28·59	29·64	30·96	1·32	+ 4
"	"	" (Thames Head)	28·29	33·06	34·06	1·00	+ 3

Div.	COUNTY.	STATION.	Average.		Depth in 1880.	Difference from average, 1870-9.	
			1860-9.	1870-9.		Amount.	Per cent.
			in.	in.	in.	in.	
V.	Dorset	Cerne Abbas (Melbury)...	39·99	40·92	38·00	2·92	— 7
„	Devon	Bovey Tracy	43·13	46·80	42·19	4·61	— 10
„	„	Exeter (D. & E. Inst.) ...	31·76	34·69	33·26	1·43	— 4
„	„	Cullumpton (Clyst Hyd.) ...	32·69	34·65	29·94	4·71	— 14
„	„	S. Molton (Castle Hill)...	47·12	47·62	40·70	6·92	— 14
„	„	Barnstaple	39·91	42·43	42·99	·56	+ 1
„	Cornwall ...	Penzance	41·51	46·80	43·04	3·76	— 8
„	„	Bodmin (Castle St.)	47·71	52·01	43·12	8·89	— 17
„	Somerset ...	Glastonbury (Street)	30·01	33·14	33·46	·32	+ 1
„	„	Sherborne	42·10	47·26	38·93	8·33	— 18
VI.	Gloucester ...	Clifton	34·09	36·36	37·37	1·01	+ 3
„	Hereford ...	Ross (Rocklands)	33·59	35·88	37·04	1·16	+ 3
„	„	„ (The Graig)	28·21	31·75	35·49	3·74	+ 12
„	Shropshire...	Burford	26·74	29·10	31·91	2·81	+ 10
„	„	Shiffnal (Haughton Hall) ...	24·87	30·69	31·84	1·15	+ 4
„	„	Oswestry (Hengoed)	35·65	39·55	41·04	1·49	+ 4
„	Worcester ...	Northwick Park.....	28·02	32·34	36·50	4·16	+ 13
„	„	Tenbury (Orleton)	30·90	33·26	35·69	2·43	+ 7
VII.	Leicester ...	Thornton Reservoir	25·61	27·59	33·37	5·78	+ 21
„	„	Loughborough	27·67	29·54	33·17	3·63	+ 12
„	„	Belvoir Castle.....	24·48	25·75	35·38	9·63	+ 37
„	Lincoln	Spalding (Pode Hole).....	25·34	24·82	37·12	12·30	+ 50
„	„	Graham	22·41	24·75	32·10	7·35	+ 30
„	„	Lincoln	20·87	23·70	30·68	6·98	+ 29
„	„	Stockwith	21·35	23·20	31·98	8·78	+ 38
„	„	Brigg	24·12	23·31	28·61	5·30	+ 23
„	„	Grimsby	21·39	23·04	28·45	5·41	+ 23
„	„	Barnetby	22·16	25·17	27·84	2·67	+ 11
„	„	Appleby Vicarage ..	24·10	26·63	29·63	3·00	+ 11
„	„	New Holland	22·66	25·29	28·03	2·74	+ 11
„	Nottingham.	Worksop	22·47	25·63	35·69	10·06	+ 39
„	„	Retford	22·74	23·04	32·57	9·53	+ 41
„	Derby.....	Bretby [Burton]... ..	27·41	30·97	35·50	4·53	+ 15
„	„	Chesterfield.....	26·93	30·54	33·27	2·73	+ 9
„	„	Combs Moss	49·62	45·71	41·61	4·10	— 9
„	„	„ Reservoir	50·01	45·67	43·38	2·29	— 5
„	„	Chapel-en-le-Frith.....	41·95	42·56	45·04	2·48	+ 6
„	„	Kilnarsh (Norwood)	24·59	26·79	35·93	9·14	+ 34
„	„	Woodhead Station	52·19	49·87	58·58	8·71	+ 17
VIII.	Cheshire.....	Bosley Reservoir	32·04	34·10	35·92	1·82	+ 5
„	„	„ Minns	32·85	33·90	38·92	5·02	+ 15
„	„	Macclesfield.....	34·54	31·67	30·27	1·40	— 4
„	„	„ (Park Green)..	36·75	38·03	36·16	1·87	— 5
„	„	Bollington (Spond's Hill) ...	37·46	35·52	37·23	1·71	+ 5
„	„	Whaley	43·89	43·38	44·20	·82	+ 2
„	„	Marple Top Lock	35·25	35·94	38·52	2·58	+ 7
„	„	„ Aqueduct	34·81	33·73	38·66	4·93	+ 15
„	„	Godley Reservoir	33·98	34·85	37·09	2·24	+ 6
„	„	Newton	31·63	29·30	34·76	5·46	+ 19
„	„	Mottram (Matley's Field) ...	37·73	36·32	44·61	8·29	+ 23
„	„	Arnfield Reservoir	37·23	41·38	46·93	5·60	+ 14

Div.	COUNTY.	STATION.	Average.		Depth in 1880.	Difference from average, 1870-9.	
			1860-9.	1870.9.		Amount.	Per cent.
			in.	in.	in.	in.	
VIII.	Cheshire..	Rhodes Wood Reservoir..	46.32	44.74	50.73	5.99	+ 13
"	"	Woodhead M. C. W. W..	51.83	49.74	56.97	7.23	+ 15
"	Lancashire..	Denton Reservoir	32.97	33.78	36.82	3.04	+ 9
"	"	Gorton Reservoir	33.71	34.14	35.39	1.25	+ 4
"	"	Manchester (Ardwick) ..	32.60	36.72	36.51	.21	— 1
"	"	" (Piccadilly)..	36.78	34.72	36.93	2.21	+ 6
"	"	Fairfield	40.90	37.66	36.80	.86	— 2
"	"	Ashton (Waterhouses) ..	36.13	39.24	45.20	5.96	+ 15
"	"	Bolton (The Folds).....	48.98	47.23	43.36	3.87	— 8
"	"	" (Heaton).....	44.21	45.11	41.80	3.31	— 7
"	"	Ormskirk (Rufford)	35.00	36.65	35.14	1.51	— 4
"	"	Bolton (Belmont)	56.61	59.91	58.20	1.71	— 3
"	"	Heywood (Nayden Dane). ..	44.13	44.67	44.96	.29	+ 1
"	"	Blackburn (Guide Res.)..	41.30	44.49	40.29	4.20	— 9
"	"	Blackpool (South Shore)..	32.99	34.43	34.72	.29	+ 1
"	"	Stonyhurst College	48.56	48.74	50.26	1.52	+ 3
"	"	Cartmel (Holker)	45.63	45.13	39.47	5.66	— 13
"	"	Monk Coniston Park ..	85.55	74.86	63.50	11.36	— 15
IX.	York, W.R...	Redmires.....	39.68	42.80	51.43	8.63	+ 20
"	"	Sheffield (Broomhall Pk.)	31.28	32.67	38.42	5.75	+ 18
"	"	Dunford Bridge Station..	56.18	52.51	52.71	.20	+ 0
"	"	Penistone.....	30.57	34.37	44.04	9.67	+ 28
"	"	Marsden (Standedge)	53.70	51.64	57.25	5.61	+ 11
"	"	Leeds (Leventhorpe Hall)	23.26	24.91	30.29	5.38	+ 22
"	"	Halifax (Midgeley Moor). ..	50.00	48.06	55.25	7.19	+ 15
"	"	" (Warley)	46.33	45.27	53.98	8.71	+ 19
"	"	Leeds (Holbeck).....	22.85	25.02	30.89	5.87	+ 24
"	"	Arncliffe	60.07	60.95	65.05	4.10	+ 7
"	" E.R ..	Hull (Beverley Road) ..	25.02	27.30	31.94	4.64	+ 17
"	" N.R...	Malton.....	27.46	28.44	30.50	2.06	+ 7
X.	North'mblnd	Allenheads ..	51.16	48.49	38.95	9.54	— 20
"	"	Bywell	28.87	33.99	29.24	4.75	— 14
"	"	N. Shields (Wallsend) ..	26.64	28.41	29.03	.62	+ 2
"	"	" (Rosella Place)	26.06	28.02	28.18	.16	+ 1
"	"	Stamfordham	27.64	30.10	31.49	1.39	+ 5
"	"	Whittle Dean ..	25.42	27.75	29.21	1.46	+ 5
"	"	Ilderton (Lilburn Tower). ..	28.66	31.33	32.73	1.40	+ 4
"	Cumberland.	Seathwaite ..	154.05	134.95	120.12	14.83	— 11
"	"	Ullswater (Hallsteads) ..	58.13	55.31	48.00	7.31	— 13
"	"	Keswick Post Office	62.40	59.14	55.81	3.33	— 6
"	"	Bassenthwaite (Mirehouse)	53.76	50.20	44.82	5.38	— 11
"	"	Cockermouth (Whi. Hall)	57.37	52.15	45.61	6.54	— 13
"	Westm'relnd	Kendal.....	53.32	51.78	45.06	6.72	— 13
XI.	Glamorgan ..	Cardiff (Ely)	42.02	46.35	39.83	6.52	— 14
"	Carnarvon ..	Llandudno	31.00	33.63	35.57	1.94	+ 6
"	Guernsey ..	Guernsey.....	37.18	39.64	44.89	5.25	+ 13
XII.	Kircudbright	Cargen [Dumfries].....	44.37	46.65	30.77	15.88	— 34
"	Dumfries ..	Dumfries (Cri. Asylum)..	39.00	41.84	27.02	14.82	— 35
"	"	Wanlockhead	66.63	65.91	56.41	9.50	— 14
"	Roxburgh ..	Kelso (Springwood Park)	24.66	27.90	27.38	.52	— 2
XIII.	Peebles	North Esk Reservoir..	38.01	38.66	36.90	1.76	— 5

Div.	COUNTY.	STATION.	Average.		Depth in 1880.	Difference from average, 1870-9.	
			1860-9.	1870-9.		Amount.	Per cent.
			in.	in.	in.	in.	
XIII.	Berwick	Thirlestane Castle	29·98	32·83	29·90	2·93 —	9
„	Haddington.	East Linton	23·77	29·36	26·38	2·98 —	10
„	Edinburgh..	Glencorse.....	37·52	40·52	43·15	2·63 +	7
„	„	Harlaw	37·64	37·97	34·30	3·67 —	10
„	„	Inveresk	29·02	30·31	28·60	1·71 —	6
XIV.	Lanark	Hamilton (Bothwell C.)..	28·89	31·72	23·45	8·27 —	26
„	„	Glasgow Observatory.....	44·41	43·29	32·65	10·64 —	25
„	Ayr.....	Kilmarnock (N. Craig) ..	43·29	40·16	33·88	6·28 —	16
„	Renfrew	Ryat Lynn	47·80	50·07	41·00	9·07 —	18
„	„	Waulk Glen	49·85	48·41	38·55	9·86 —	20
„	„	Stanely Reservoir	46·93	47·78	37·19	10·59 —	22
XV.	Stirling	Stirling (Kerse)	32·96	33·47	26·90	6·57 —	20
„	Argyll	Lochgilphead(Callton M.)	54·25	56·35	42·17	14·18 —	25
XVI.	Kinross	Loch Leven.....	36·22	38·05	29·50	8·55 —	22
„	Perth	Aberfoyle.....	61·82	59·39	41·40	17·99 —	30
„	„	Dunblane (Kippenross)...	36·16	36·00	27·70	8·30 —	23
„	„	Lanrick Castle	48·48	47·46	35·80	11·66 —	25
„	„	Bridge of Turk	61·89	72·32	56·70	15·62 —	22
„	„	Auchterarder(Colquh'lie)	40·34	40·12	30·36	9·76 —	24
„	Forfar..	Craigton	34·88	41·96	29·64	12·32 —	29
„	„	Hill Head	35·19	41·82	29·92	11·90 —	28
„	„	Arbroath	29·05	30·49	24·41	6·08 —	20
„	Kincardine..	The Burn.....	34·91	37·85	28·90	8·95 —	24
XVII.	Aberdeen ..	Braemar	33·40	38·14	30·47	7·67 —	20
„	„	Aberdeen (Rose Street) ..	29·43	31·75	27·35	4·40 —	14
„	Banff	Gordon Castle.....	29·19	32·26	28·99	3·27 —	10
XVIII.	Inverness....	Culloden	27·08	25·46	23·65	1·81 —	7
XIX.	Sutherland..	Golspie (Dunrobin Castle)	27·69	31·94	26·57	5·37 —	17
„	Orkney	Pomona (Sandwick)	38·85	36·24	36·71	·47 +	1
„	„	Shapinsay (Balfour Cas.).	32·41	30·41	32·30	1·89 +	6
XX.	Cork	Queenstown.....	33·01	35·71	29·81	5·90 —	17
„	„	Cork (Royal Inst.)... ..	34·77	36·35	35·91	·44 —	1
XXI.	Kilkenny ..	Inistioge (Woodstock) ..	39·38	46·64	42·53	4·11 —	9
„	King's Co....	Tullamore	27·94	31·06	32·17	1·11 +	4
XXIII.	Armagh....	Armagh Observatory.. 1ft.	32·01	30·95	32·65	1·70 +	6
„	Antrim	Belfast (Queen's Coll.)....	34·22	34·92	28·76	6·16 —	18

EXTREMES OF RAINFALL IN 1880.

Largest Rainfall, at The Sty, Cumberland..... 163·40 in.
 Least Rainfall, at Fearn, Tain, Ross-shire 18·28 „

ENGLAND.

GREATEST.		LEAST.	
Div.	in.	Div.	in.
X. The Sty	163·40	IV. Ipswich (Fonnereau Rd.) ...	22·23
„ Taylor's Ghyll	134·40	„ Manningtree (Lawford)	22·25
„ Seathwaite.....	120·12	„ Stutton (Alton Hall)	22·32
„ Styhead Tarn ..	118·40	III. Cambridge (Cherryhinton) ..	23·02
„ Sprinkling Tarn	109·39	IV. Rendlesham Hall	23·17
„ Ullscarf.....	103·00	„ Ipswich (Bishop's Hill)	23·40

WALES AND THE ISLANDS.

GREATEST.		LEAST.	
Div.	in.	Div.	in.
XI. Rhiwbryfdir	98·29	XI. Solva	28·89
„ Aberdare (Tydraw)	84·79	„ Hawarden [Chester].....	31·53
„ Pen-y-gwryd	82·99	„ Rhyl (Sedgeley House)	31·72
„ Neath (Glyncorwg)	81·08	„ Newtown (Caersws)	32·50
„ Llanwddyn (Cefnglass)	74·20	„ St. Ann's Head ..	32·64
„ Dolgelly (Hengwrt)	66·14	„ Holywell (Bagillt)	33·50

SCOTLAND.

GREATEST.		LEAST.	
Div.	in.	Div.	in.
XVIII. Glenquoich	101·05	XVII. Tain (Fearn)	18·28
„ Loch Shiel (Glenaladale)	98·90	„ „ (Springfield)	19·21
„ Skye (Sligachan)	86·62	XVI. Leuchars (Ballmullo) ...	20·49
XIX. Assynt (Achumore)	75·30	XIII. Leith	20·62
XVIII. Fort William.....	72·34	XVII. Forres.....	20·65
XV. Strontian (Laudale)	70·88	XVI. Kilmany (Mountquhanie) ...	20·90

IRELAND.

GREATEST.		LEAST.	
Div.	in.	Div.	in.
XXII. Clifden (Kylemore) ..	77·00	XXIII. Antrim (The Manse)	24·49
XX. Kenmare (Derreen)	63·78	„ Donaghadee	25·51
„ Valentia (Telegraph Station) ..	53·93	XX. Limerick (Kilcornan)	26·55
„ „ (Observatory)	53·69	XXI. Dundalk (Fardreg).....	27·04
„ Dromore Castle.....	51·62	XXIII. Banbridge (Milltown).....	27·57
„ Cara Lodge	50·30	XXI. Greenore	27·85

GENERAL TABLES
OF
TOTAL RAINFALL IN 1880,
AT UPWARDS OF
2000 STATIONS
IN THE
BRITISH ISLES.

EXPLANATION OF THE ARRANGEMENTS OF THE FOLLOWING GENERAL TABLES.

The divisions are the same as those adopted by the Registrars General of England and Scotland. The boundaries of these divisions are shown on the map facing p. 170 of *British Rainfall*, 1876.

The counties follow the same order as in the reports of the before-mentioned officers ; but an alphabetical list of the counties is given, whereby the page or pages on which all returns from each county will be found can be at once ascertained.

The stations in each county are arranged nearly in the order of their latitude from South to North.

In order to facilitate finding the fall in any part of the country, the first name is almost always that of a place given in *Bradshaw*, the *British Postal Guide*, or the *Clergy List* ; the second name is generally added to fix accurately the site of Observation ; but in a very few instances, this second name is in [] instead of () ; it then shows that the nearest town is in an adjoining county. For instance, “Lowestoft (Gisleham)” means Gisleham, near Lowestoft, both being in one county, but “Geldeston [Beccles]” means Geldeston, Norfolk, near Beccles, in another county—Suffolk.

The contents of the columns are sufficiently explained by the headings, except that in the column headed “diameter,” figures will occasionally be noticed of a different type from the rest of the tables ; these figures indicate the length of the sides of rectangular mouthed gauges. These measurements are all in inches.

The letter D denotes that a copy of the daily record has been received, that it is perfect throughout the year, and that the printed amount is the correct total of these daily entries.

An asterisk * denotes that the gauge was tested before erection, and a † that it has been visited and examined since. A note of interrogation (?) implies doubt, not necessarily error. ... indicates the absence of information.

In the column of altitudes several symbols are used, their meaning is as follows :—A, that a series of levels has been taken from the gauge to an Ordnance bench mark ; I, that the height is estimated or ascertained approximately from the same source ; L, that levels have been taken from the gauge to the sea, or to some datum other than Ordnance mean sea level ; B, that the altitude has been taken by the barometer ; and ?, that the height is uncertain.

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DIVISION I.—MIDDLESEX.—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which ·01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level	1880.	
MIDDLESEX—(con.)						
Hampstead (Kidderpore Reserv.)	T. Hack, Esq., C.E.	...	...	...	30·35	...
† „ (Branch Hill Lodge)	B. Woodd Smith, Esq..	8	0 10	380 †	30·40	177
† „ (Squire's Mount) ...	Rogers Field, Esq. C.E.	5	1 0	388 †	29·68	165
„ (The Priors)	„ „ „ „	5	1 0	327 †	30·23	160
„ Highgate (Milfield Lane)	C. B. E. Ford, Esq. ...	5	7 0	...	33·50	183
† „ Nurseries	J. Cutbush, Esq.	5	1 0	394 †	29·17	150
„ Child's Hill (Helenslea)	A. J. Woodhouse, Esq..	5	1 1	245 †	29·11	171
*Clapton Common	J. Parnell, Esq.	5	1 1	98 †	27·40	167
„ Uxbridge (Harefield Park)	W. F. Vernon, Esq. ...	8	0 8	296 †	34·11	143
† Muswell Hill	J. W. Scott, Esq.	5	0 9	310 †	30·02	169
„ „ „	„ „ „ „	8	0 10	310 †	29·85	169
„ East Finchley (Hilton House) ...	G. W. Robertson, Esq.	5	1 0	300 ?	26·87	157
„ Pinner Hill	W. A. Tooke, Esq.	5	3 6	410 †	30·58	155
„ Enfield (Nag's Head Lane)	J. Muir, Esq., C.E. ...	12	3 0	108 †	31·11	168
„ Chase	T. Paulin, Esq.	5	1 0	...	32·21	154
„ „ „	„ „ „ „	8	1 0	...	32·62	154
„ „ „	„ „ „ „	5	5 0	...	31·57	154

DIVISION II.—SOUTH-EASTERN COUNTIES.

SURREY.

„ Haslemere	J. W. Penfold, Esq. ...	8	4 0	481 †	40.76	151
Godalming (Dunsfold)	Mr. W. Underwood ...	5	2 6	166	31.29	...
Haslemere (Weycombe)	G.B. Buckton, Esq. FRS.	5	4 0	583 †	39.85	...
„ Cranleigh (Alderbrook)	Mr. J. Bryan	5	1 0	223 †	34.99	149
„ „ (Hall Place, Hascombe)	E. S. Rowcliffe, Esq.	...	...	220	32.10	...
Godalming (Witley)	Mrs. Foster	5	1 0	350 ?	35.49	133
Dorking (Holmbury)	Mr. Bayman	5	0 9	553 †	40.23	197
„ „ (Abinger Hall)	T. H. Farrer, Esq. ...	8	2 0	400	36.86	154
† „ „ (Holmwood)	A. Sconce, Esq.	5	1 2	320 †	38.62	123
„ Guildford (Guildown)	Miss J. P. Hadden	5	0 11	220 †	30.60	150
„ Farnham (The Bourne Vicarage) ..	Rev. T. W. Sidebotham	5	1 0	308 †	34.08	167
„ Reigate (Woodhatch Lodge) ...	T. B. Haywood, Esq. ...	12	2 9	270 †	29.96	125
„ Dorking (Horsham Road)	Miss Wilkinson	5	0 11	234 †	37.47	157
„ „ (The Denbies) (Top)	G. Dines, Esq.	5	1 0	610 †	38.09	...
† Redhill (Oxford Road)	W. H. Tyndall, Esq. ...	8	1 0	300 †	35.15	180
„ „ (Thornielee)	N. Southall, Esq.	8	1 0	275 †	33.05	146
† Reigate (Wray Park)	A. Rosling, Esq.	5	1 0	330 †	37.55	164
„ „ (Nutwood)	H. E. Gurney, Esq. ...	5	1 0	330 ?	34.64	148
„ Nutfield Priory	J. Fielden, Esq.	8	1 2	468 †	35.58	179
„ Guildford (Wern)	Major Mathew	5	4 0	170	32.20	144
„ Titsey [Westerham]	Baldwin Latham Esq. CE	5	1 0	448 †	33.82	178
„ „ (Botley Hill) [Westerham] ..	„ „ „	5	1 0	870 †	35.22	161
„ „ „ („ „ Farm)	„ „ „	5	1 0	864 †	35.65	170
„ Chipstead (Parson's Green)	„ „ „	5	1 0	506 †	35.03	153
„ Upper Caterham	Dr. Elliot	5	1 0	609 †	30.27	144

DIVISION II.—SOUTH-EASTERN COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which ·01 or more fell
		Diameter	Height Above Ground	Height Above Sea Level	1880	
SURREY—(con.)						
† Godstone (Birchwood House) ...	Messrs. C. & F. Rutley	5	1 0	471 π	32·61	168
† Chelsham (Henley)	W. Foster, Esq.	5	1 0	607 π	38·41	162
„ Kenley	Baldwin Latham Esq CE	5	1 0	501 π	34·81	194
† Weybridge Heath (Bartropp's) ...	Mrs. Harrison	8	0 6	150 π	29·52	...
„ „ (Oakfield)	H. Yool, Esq.	5	1 0	107 π	28·85	160
„ „ (Church Street)	„ „ „ „	5	1 0	55 π	29·00	...
Walton-on-Thames (Hersham) ..	G. Dines, Esq.	8	4 0	55 π	28·32	...
„ „ „ „ „ „ „ ..	„ „ „ „ „ „ „ ..	24	50 0	101 π	26·83	...
„ Addington	Baldwin Latham Esq CE	5	1 0	268 π	33·74	138
Sutton (Mulgrave Road)	W. Goode, Esq.	5	7 3	230 π	31·77	...
„ Croydon (Beechholme Bramley Hill)	W. T. Reynolds, Esq. ...	5	1 0	179 π	31·20	151
† „ „ (Wandle Road)	G. Corden, Esq.	5	1 0	155 π	29·63	147
„ „ (Tanfield Lodge)	J. Weston, Esq.	5	0 10	155 π	29·20	139
„ „ (Waddon House)	P. Crowley, Esq.	8	3 0	...	27·94	144
„ „ (Church Street)	Mr. C. A. Blogg	5	20 8	169 π	31·82	...
† „ „ (Nantwich House)	Baldwin Latham Esq CE	8	4 0	259 π	30·00	166
„ „ „ „ „ „ „ ..	„ „ „ „ „ „ „ ..	8	1 0	253 π	30·43	165
„ „ (Brinstone Sew. Works) ..	„ „ „ „ „ „ „ ..	5	1 0	130 π	29·86	151
„*† „ „ (Addiscombe)	E. Mawley, Esq.	8	0 9	202 π	30·44	166
„*† „ „ „ „ „ „ „ „ monthly	„ „ „ „ „ „ „ ..	8	0 9	202 π	30·62	...
„ „ (Thornton Heath)	F. Wilkin, Esq.	5	0 8	155 π	29·00	151
Chertsey (Burley Orchard)	W. Herring, Esq.	5	1 0	47 π	26·69	...
Surbiton (Seething Wells)	G. Lott, Esq.	10	0 6	25	29·86	172
„ Mitcham (Tamworth Lodge)	H. Hoare, Esq.	5	1 3	90 π	28·42	141
„ „ (Woodburn House) ..	Baldwin Latham Esq CE	5	1 0	50 π	27·96	183
Norwood (Beulah Hill)	S. R. Scott, Esq.	5	1 0	350 π	29·44	117
„ Wimbledon	T. Devas, Esq.	12	3 0	170 π	31·26	182
† Lower Norwood	W. Marriott, Esq.	8	1 0	185 π	28·37	161
Egham (Cooper's Hill)	The Meteor. Council ...	8	1 1	280	28·53	153
„ Kew Observatory	The Kew Committee ...	11	1 9	19 π	28·73	163
„ Brixton (Acre Lane)	The Meteor. Council ...	8	1 2	77 π	30·05	166
„ Peckham (Asylum Road)	Sir J. W. Bazalgette, CE.	5	5 6	20 π	30·18	183
„ Vauxhall (Effra Creek)	„ „ „ „ „ „ „ ..	8	30 9	35 π	25·95	119
KENT.						
„ Hawkhurst (Sandhurst Rectory) ..	Rev. G. Ridout	5	1 3	208 π	30·86	150
„ Dymchurch (New Hall)	H. D. Good, Esq., C.E.	8	1 0	12 π	30·80	128
Tenterden (Summerhill)	Rev. A. Wilkin	12	1 0	145 π	31·45	138
Benenden (East End)	J. Ellis Mace, Jun. Esq.	8	1 9	193 π	31·68	...
„ „ „ „ „ „ „ ..	„ „ „ „ „ „ „ ..	5	1 0	193 π	30·95	...
„ Tenterden	„ „ „ „ „ „ „ ..	8	1 5	190 π	32·56	178
„ „ „ „ „ „ „ „ Snowdon	„ „ „ „ „ „ „ ..	8	1 5	190 π	31·68	165
„ „ (Ashbourne)	A. Pinyon, Esq.	5	2 8	45 π	31·66	...
† Hythe	H. B. Mackeson, Esq. ...	8	0 6	12 π	46·21	191
† Cranbrook (Swattenden)	R. Appach, Esq.	8	1 4	350 π	32·33	156
„ „ (Hartley)	G. Pile, Jun., Esq.	5	4 0	405 π	35·98	203
Hythe (Paddlesworth)	Mr. R. Dixon	8	1 0	608 π	45·67	...
„ Gowdhurst Vicarage	Rev. J. S. Clarke	5	1 0	412	31·27	165

DIVISION II.—SOUTH-EASTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1880	Days on which ·01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level		
			ft. in.	feet.	inches.	
KENT—(con.)						
Dover Station.....	The Meteor. Council ..	8	23 0	46	27·97	172
d† „ (Russell Street)	H. J. Poulter, Esq. ...	5	1 6	...	32·14	148
Tunbridge Wells	The Meteor. Society ...	5	1 0	500	33·73	153
d Ashford (Bethersden)	W. H. Mold, Esq.	5	3 0	112 T	32·64	161
d „ (Beaver Green)	T. Nickalls, Esq.	5	1 0	155 T	34·54	181
d Acrise	G. C. Woollett, Esq. ...	8	1 0	484 T	39·96	177
Ashford (East Hill)	J. S. Burra, Esq.	8	1 0	126 T	33·02	...
„ (Kennington)	„ „ „	8	...	...	31·01	...
d Tunbridge Wells (Pembury) ..	W. Brentnall, Esq. C.E.	8	1 8	181 T	30·81	149
d Tunbridge (St. Mary's).....	W. C. Punnett, Esq. ...	5	1 6	96 T	29·27	141
„ („ „)	The Meteor. Society ...	5	1 0	96	28·96	...
„ (Hadlow Park)	Lady Yardley	8	3 0	...	26·98	...
d† Maidstone (Hunton Court)	Mr. P. Goddard	8	0 6	80 T	26·87	159
„ (Tovil House)	J. Barcham Green, Esq.	5	1 0	60	28·95	156
d „ (Lower Tovil)	L. Green, Esq.	5	1 0	30 T	27·24	158
Deal (Northbourne)	H. J. Hannam, Esq. ...	5	1 2	60	40·98	162
Sevenoaks (Ide Hill)	J. Frost, Esq.	5	1 0	700 T	34·56	176
d Canterbury (Chilham)	J. Marten, Esq.	5	1 0	330 T	32·93	167
Charing (Otterden)	Rev. W. A. Paxton ...	5	1 0	507 T	32·00	...
† Sandwich (Walton House, Eastry)	Colonel Rae	5	2 10	55 T	30·48	...
† Sheldwich	Rev. B. S. Malden	5	1 0	249 T	30·31	126
d† Selling (Harefield).....	E. Neame, Esq.	5	1 0	217 T	32·65	189
d „ (Gosmere)	W. Butcher, Esq.	5	1 0	255 T	29·20	183
d Canterbury (Bridge Street)	Mr. J. Reid	5	1 6	52 T	35·98	174
„ (Harbledown)	Miss Metcalfe	5	1 6	262	29·47	164
d „ (Old Tree, Hoath)	G. Rammell, Esq.	8	2 0	112	27·75	136
† Seven Oaks (River Hill)	J. T. Rogers, Esq.	8	4 0	535 T	29·23	120
„ (Rockdale)	N. Clode, Esq.	5	3 0	470	29·91	150
d „ (Clare Bank)	J. M. Clabon, Esq.	5	4 0	540 T	32·07	144
d† „ (Rivershead Vic.) ..	Rev. J. B. Murdoch ..	5	0 6	300 T	32·30	148
d Westerham (Betsom's Hill)	Baldwin Latham Esq CE	5	1 0	811 T	36·99	171
Aylesford (Preston Hall)	Mr. A. Waterman	8	1 0	...	28·58	...
Faversham (Hernhill)	A. J. Alexander, Esq. ..	...	...	...	30·21	...
Ospringe (Lorenden)	W. C. Stunt, Esq.	5	1 0	...	29·93	142
d Stourmouth	Rev. R. Drake	5	1 0	12 T	30·58	106
d Farnborough (Leaves Green) ..	Baldwin Latham Esq CE	5	1 0	534 T	33·13	136
† Ramsgate (The Vale)	M. Jackson, Esq.	5	1 0	90 T	29·56	141
d† Margate (Acol)	E. S. Lendon, Esq. ...	5	1 0	60 T	28·81	133
d „ (Renfrew Villa)	T. Twyman, Esq.	5	1 0	55 T	28·27	153
Chatham (School Mil. Engineers)	The Meteor. Council ...	8	1 0	136	25·51	143
d† Bromley Common, S.E.	Rev. A. Rawson	8	1 0	250 T	32·21	154
Bickley (Highfield)	J. Batten, Esq.	5	1 2	285	31·82	...
d† Beckenham (Foxgrove)	Percy Bicknell, Esq. ...	5	0 5	142 T	27·68	151
d† „ („ „)	„ „ „	5	4 0	145 T	27·00	149
† Foot's Cray (Sidcup)	Miss Berens	5	0 8	231 T	28·78	...
d† Eltham Green	E. J. C. Smith, Esq. ...	5	1 0	80 T	28·05	165
d Lee (Blessington Road)	J. Grant, Esq., C.E. ...	10	4 9	49 T	31·56	160
d Blackheath	J. Glaisher, Esq., F.R.S.	8	0 5	160 T	30·11	152

DIVISION II.—SOUTH-EASTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Diameter	Rain Gauge.		Height Above Sea Level	Depth of Rain.	Days on which ·01 or more fell.
			Height Above Ground	Height Above Sea Level			
KENT—(con.)							
Greenwich (Royal Observatory).....	Sir G. B. Airy, F.R.S..	8	0	5	155 T	29·68	160
n Deptford (Pumping Station).....	Mr. W. Jeffree	10	0	4	18 T	33·19	154
WEST SUSSEX.							
n Littlehampton (Surrey House)...	G. Neame, Esq.	5	1	8	20 T	33·79	141
„ (Rustington).....	Capt. Lowry	5	1	0	25 T	30·54	...
n† Worthing (Bedford Row).....	W. J. Harris, Esq. ...	8	1	0	18 T	32·91	144
„ „ „)monthly	„ „ „ „	5	1	0	18 T	33·54	...
n Arundel (Yapton)	W. A. Hounsom, Esq..	5	1	0	24 T	30·51	157
n West Thorney	F. Padwick, Esq.	5	0	6	10	31·20	127
† Chichester (Westgate)	Dr. Tyacke.....	5	0	6	40 T	31·29	...
Arundel (Patching)	J. Drewitt, Jun., Esq..	5	1	0	180	34·55	132
n „	R. Holmes, Esq.	8	3	1	75	32·21	108
„ (Dale Park).....	Mr. E. Sandford	11	3	5	316 T	36·12	115
n† Steyning	Col. Ingram	5	1	0	80 T	35·32	133
Chichester (Eartham House) ...	Sir P. Milbanke, Bt....	3	4	0	230 T	32·93	...
„ (Singleton Rectory)...	Rev. F. A. Bowles.....	5	...	...	250	40·32	107
† „ (Chilgrove)	J. W. Woods, Esq. ...	5	0	6	284 T	37·52	...
† Petworth Rectory	Rev. C. Holland	5	1	4	190 T	46·38	118
† Horsham (Leonardslee)	Mr. Ford.....	5	1	6	273 T	37·00	...
n Midhurst (Lynch)	F. Eames, Esq.	5	0	6	160 ?	39·82	117
† Fernhurst [Haslemere]	Miss E. A. Salvin	8	0	10	288 T	36·62	...
n Horsham (Albion Terrace)	R. Sheppard, Esq.....	6	5	0	150 T	32·21	155
„	H. Padwick, Esq.	8	0	10	200 T	33·99	107
„ (Compton's Lea)	T. W. Cowan, Esq. ...	5	4	0	253 T	34·10	159
EAST SUSSEX.							
Beachy Head	Miss W. L. Hall	5	1	0	515 T	25·47	...
„ „	„ „ „ „	5	1	0	495 T	28·81	...
n Eastbourne (Cavendish Place) ...	The Meteor. Society ...	8	1	0	25	33·93	130
n† „ (The Gore)	Miss W. L. Hall	5	1	0	85 T	30·91	139
„ (Osborne House).....	„ „	5	4	0	15 B	34·88	155
n† „ (Cemetery)	„ „ „ „	5	4	0	160 T	33·50	135
Pevensey (Walls End Cottage)...	A. Vidler, Esq.	8	1	0	0	31·12	...
n† Brighton (The Steyne)	Dr. R. P. B. Taaffe ...	5	1	0	39 T	32·86	167
n† „ (St. James' Street).....	E. Rowley, Esq.....	5	1	0	37 T	33·89	157
„ (West)	Rev. E. W. Holland ...	5	1	9	55	30·13	...
n „ (Buckingham Place) ...	F. E. Sawyer, Esq. ...	5	5	0	206 T	28·89	145
n „ (Blatchington Road) ...	J. Park, Esq.	8	0	6	...	31·83	158
n† „ (W. W., Lewes Road)...	Mr. W. Insell	5	3	8	...	33·61	174
n St. Leonard's (Carisbrooke Road)	H. Colborne, Esq.	5	1	0	117 T	35·74	174
n „ (The Grove)	W. B. Young, Esq. ...	5	1	1	110 T	36·36	142
n† Hastings (The Hollies)	A. H. Wood, Esq. C.E.	8	3	0	100 T	38·30	171
n „ (Harmers Reservoir) ...	W. Andrews, Esq.....	8	0	8	77	33·10	142
Hailsham.....	Rev. F. Clyde Harvey..	5	1	0	105	29·81	124
n† Falmer.....	R. R. Verrall, Esq. ...	5	1	6	312 T	33·68	111
n Lewes (Iford).....	A. Hillman, Esq.	5	1	0	33 T	32·77	143
† „ (Glynde Place)	Mr. J. McLeod	5	2	9	45	29·49	137

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DIVISION II.—SOUTH-EASTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1880	Days on which 101 or more fell
		Diameter	Height Above Ground	Height Above Sea Level		
			ft. in.	feet.	inches.	
HAMPSHIRE—(con.)						
Alresford (Cheriton Rectory)	Rev. A. Orr	5	2 6	240	35·00	..
„ (Ovington)	Rev. W. H. B. Stocker	5	5 1	225 T	36·14	166
† „ (Arle Bury)	Capt. G. F. Marx	5	1 6	238 A	29·30	123
Winchester (Harestock)	Col. Knight	5	1 0	304	33·76	161
Alresford (Swarraton Rectory)	Rev. W. L. W. Eyre	5	1 0	310 A	32·76	152
Alton (Medstead)	Rev. E. Silver	5	1 1	697 T	33·85	...
„ (East Worldham)	Rev. G. H. Fell, D.D.	5	1 6	499 A	34·56	...
† „ (Ashdell)	F. Crowley, Esq.	8	3 6	396 A	35·53	...
Micheldever (Northbrook)	J. A. Caird, Esq.	5	1 1	270 T	32·73	...
Andover (Red Rice)	Mr. C. W. Learman	5	0 7	277 T	29·90	128
„ Odiham Priory	Rt. Hon. G. S. Booth, M.P.	5	4 4	...	32·10	148
„ Dogmersfield Park	Sir H. B. Mildmay, Bt.	5	1 6	...	28·93	...
„ Basingstoke (Chapel Hill)	G. Stephens, Esq.	5	1 0	328 T	32·61	176
† Rotherwick (Tylney Hall)	C. E. Harris, Esq.	5	0 8	330 T	30·81	...
„ Basingstoke (Sherborne St. John) ..	Rev. D. W. Chute	5	1 3	276 T	36·94	179
„ Hartley Grange	W. Walkinshaw, Esq.	5	1 0	220 A	29·77	...
„ „ Wespall	Rev. J. C. Keate	8	0 9	233 A	29·92	...
„ Blackwater (Hurstleigh)	Miss Gibson	5	1 0	220 T	31·60	186
† Strathfield Turgiss	Rev. C. H. Griffith	5	1 0	200 A	30·67	158
„ „ „ „	„ „ „ „	5	3 0	200 A	29·34	161
† Strathfieldsaye	Mr. J. Bell	8	1 0	160 T	32·06	132
† Heckfield (Park Corner)	J. Martineau, Esq.	5	1 3	258 T	29·49	142
BERKS.						
„ Reading (Beech Hill)	Rev. C. S. Turner	5	1 0	226 A	29·28	167
„ Newbury (Greenham)	Capt. J. Ward, R.N.	5	1 0	260 L	31·58	190
„ „	W. J. Cowper, Esq.	5	4 6	...	32·76	174
„ Hungerford (Denford Park)	G. C. Cherry, Esq.	5	1 2	...	32·98	171
„ Reading (Englefield)	R. Benyon, Esq.	5	1 1	...	37·71	154
„ „ (Russell Street)	Dr. Workman	5	1 6	154 A	29·24	158
„ „ (The Acacias)	A. Palmer, Esq.	5	3 0	157 A	30·27	121
„ Newbury (Welford Park)	Mr. C. Ross	5	1 0	335 A	34·45	178
„ „ „ „	„ „ „ „	5	1 0	341	34·34	178
„ Reading (Purley)	Hon. R. Boyle	5	1 0	198	32·02	154
„ East Ilsley	R. Osmond, Esq.	5	3 6	...	34·69	161
„ Maidenhead (Cookham Vic.)	Rev. R. W. Rogers	5	1 3	90 T	30·31	184
„ Shrivenham (Ashbury Vic.)	Rev. H. Miller	5	1 0	479 A	29·74	179
„ Wallingford (Blewberton Ho.)	H. P. Slade, Esq.	6	1 2	240 B	34·97	...
„ Wantage (Letcombe Regis)	S. W. Silver, Esq.	5	1 0	...	32·31	158
„ Wallingford (The Castle)	J. Kirby Hedges, Esq.	5	0 9	175 A	29·12	133
„ Long Wittenham	Rev. J. C. Clutterbuck.	12	1 3	170 A	35·12	147
„ Faringdon (The Elms)	W. Dundas, Esq.	5	1 0	340 T	31·96	173

DIVISION III.—SOUTH MIDLAND COUNTIES.

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1880	Days on which ·01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level		
			ft in.	feet.	inches.	
HERTS.						
d Southgate (The Lawns).....	H. P. Church, Esq.	6	0 8	240 T	31·12	186
d Watford (Wansford House).....	J. Hopkinson, Esq.	5	1 0	225 A	33·36	161
d " (Oaklands)	E. Harrison, Esq.	5	5 6	273 T	33·03	160
† St. Albans (Gorhambury).....	Mr. J. Thompson	6	2 6	425 T	34·99	161
d Hemel Hempstead (Nash Mills)..	Messrs.J.Dickinson&Co. 12	3 9	237 T	34·05	153	
d Gt. Berkhamstead (High Street)	W. Squire, Esq.....	8	1 5	370 B	36·12	158
Hertford (Bayfordbury)	W. C. Baker, Esq.....	8	0 4	250	27·89	149
Hemel Hempstead (Gt. Gaddesden)	Rev.W.TyrwhittDrake	8	1 0	426 A	34·38	...
Tring (Cowroast)	H. Thomas, Esq.	10	4 2	345 L	34·99	143
Harpenden (Rothamstead)	Messrs.Lawes & Gilbert	5	0 9	420 T	33·44	181
" " " " " "	" " " " " "	72x87	0 9	420 T	33·97	181
Hatfield (Brockett Hall)	Mr. W. Gurney	8	1 0	...	30·17	159
d Ware	J. Muir, Esq., C.E.	12	3 0	114 T	29·07	136
d Welwyn Rectory	Rev. C. L. Wingfield..	5	0 4	...	29·06	175
d Kensworth [Dunstable]	Miss Jones	5	1 0	...	33·78	157
Ware (Much Hadham)	Rev. H. S. Mott.....	5	1 0	222 B	28·85	176
Welwyn (Datchworth Rectory)..	Rev. J. Wardale	6	1 0	357 T	25·71	156
Stevenage (Knebworth Rectory).	Rev. F. G. Jenyns.....	5	1 0	391 A	30·38	153
"	Rev. J. O. Seager	8	2 0	319 L	29·78	195
d† Hitchin	W. Lucas, Esq.	5	2 1	238 A	28·88	170
" (High Down)	J. Pollard, Esq.	5	1 1	422 T	30·05	145
d Buntingford (Throcking Rectory)	Rev. C. W. Harvey ...	5	1 0	484 T	27·41	156
Royston (Therfield Rectory).....	Rev. J. G. Hale	5	4 3	400 ?	28·18	140
d† "	H. Wortham, Esq.....	8	0 6	269 A	27·39	140
BUCKINGHAMSHIRE.						
Datchet (Riding Court).....	The late C.S.Cantrell Esq	5	1 0	61 T	31·10	...
d Slough (Langley)	R. H. Major, Esq.	8	0 10	85 T	31·56	161
" (Upton)	G. Bentley, Esq.	5	4 0	94	33·49	...
High Wycombe	H. S. Wheeler, Esq....	8	0 9	225 A	30·63	...
Great Missenden	Mr. J. Begbie	6	1 6	600 T	35·31	...
Aylesbury (Serena Terrace)	J. Copcutt, Esq.....	12	1 0	280 T	38·70	155
" (Mentmore)	Mr. J. Smith	5	1 6	...	29·40	...
d† Winslow (Addington Manor) ..	E. Hubbard, Esq.	8	1 0	309 A	33·99	179
d† Buckingham (Adstock).....	J. E. S. Weston, Esq... 5	0 9	350 T	32·47	158	
† " (School Lane)	Mr. W. Walker.....	8	1 3	269 A	31·53	157
Stony Stratford (Thornton)	Mr. W. Sturdy	5	1 6	...	33·41	...
Woburn Sands	C. P. Stuart, Esq.....	5	1 1	...	32·66	148
d Newport Pagnell	R. Littleboy, Esq.....	5	2 0	...	30·50	...
Olney (Filgrave Rectory).....	Rev. J. Tarver	8	0 8	...	31·84	...
OXFORD.						
Henley-on-Thames (Greys)	Rev. N. Pinder	5	1 8	370 T	31·81	...
d " " (Assenton)... ..	Mr. J. Ratty	5	1 0	281	39·79	172
" " (Stonor Park)	Rt. Hon. Lord Camoys	5	1 0	400 T	40·71	176
Burcotc [Abingdon]	H. J. Hannam, Esq....	5	1 3	168	31·47	157
Thame (Aston Rowant).....	T. Taylor, Esq.	8	1 0	395 B	31·01	162
d† Oxford (Mag. Coll. Laboratory).	E. Chapman, Esq.	5	1 0	186 A	30·04	169

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which fall or more fell
		Diameter	Height Above Ground	Height Above Sea Level	1880	
			ft. in.	feet.	inches.	
OXFORD—(con.)						
Oxford (Radcliffe Observatory) ..	E. J. Stone, Esq., F.R.S.	10	112 0	320 A	23·33	142
" " " " " "	The Meteor. Council ...	10	0 11	208	30·92	192
D " (Norham Road)	Rev. C. B. Mount	9	1 0	220 ?	30·90	...
Witney (Ringwood Farm)	Mr. W. J. Abraham ...	5	5 0	...	31·30	147
D Woodstock (Wootton Rectory) ..	Rev. A. E. Robinson...	5	1 1	...	33·56	168
* Bicester (Stratton Audley Park).	G. Glen, Esq.	5	2 5	381 A	31·26	...
Banbury (Bloxham Grove)	Rev. G. Warriner	8	3 6	390 T	32·57	163
D " (Cotefield, Bodicote)	T. E. Cobb, Esq.	8	2 0	385 T	33·67	188
D† " (High Street).....	T. Beesley, Esq.....	6	7 0	330 A	32·43	187
D " (Wroxton)	A. R. Tawney, Esq. ...	5	3 0	490 A	34·42	188
NORTHAMPTON.						
Kings Sutton [Banbury]	Mr. E. Good	5	1 0	400 B	31·57	141
Brackley	Mr. E. Durran	8	6 10	408	33·74	169
D Thorpe Mandeville [Banbury]...	Rev. W. T. Browning..	5	1 0	555 T	36·25	162
D Towcester	Mr. J. Webb	5	1 0	...	31·09	153
" (Easton Neston)	Mr. E. Slarke	8	1 0	340 T	31·66	165
D Daventry (Helidon)	Late Rev. C. S. Holthouse	5	1 0	600 T	33·92	168
† Weedon Beck.....	R. Capell, Esq.	5	4 0	265 T	34·70	149
D Castle Ashby	R. G. Scriven, Esq. ...	5	1 0	275 B	31·51	149
Northampton (Little Houghton).	Mr. J. Brawn.....	5	2 4	...	30·22	158
D Weedon (Floore)	E. G. Loder, Esq.	5	1 2	300 T	33·50	142
D Northampton (The Holly's)	Alderman Macquire ...	8	1 6	232	32·49	163
D " (Gold Street)	Mr. S. Law.....	5	6 6	230 A	30·75	158
" (Sedgebrooke)	C. A. Markham, Esq....	5	1 0	250 ?	33·73	...
D " (Althorp House)	C. S. Groom, Esq.	8	3 10	310 A	32·93	157
" (Chapel Brampton)	E. Dowdall, Esq.	5	3 0	...	33·67	140
D Wellington' (Croyland Abbey). ..	E. Sharman, Esq.	5	0 2	...	33·40	194
D Thrapstone (Hargrave)	J. L. Baker, Esq.	5	1 0	219 A	36·38	152
Kettering	J. Wallis, Esq.	8	1 3	300 B	32·41	179
Rothwell	J. More, Esq., M.D. ...	8	1 2	300	32·09	156
Oundle (Bramston House)	J. S. Clarke, Esq.	5	1 0	103 A	32·47	165
Rockingham Castle	Mr. J. H. Brown	5	1 0	400 L	32·74	141
D Peterborough (Springfield Ho.).	J. Whitwell, Esq.	8	1 10	50 L	33·58	137
" (Westgate).....	Dr. W. Thomson	5	1 0	32 A	31·12	130
D Easton [Stamford].....	C. Day, Esq.	5	1 0	278 T	33·99	189
HUNTS.						
D St. Neots (Tetworth Hall)	Mrs. Kaye	5	0 8	114 T	31·95	139
D " (Wareley Vicarage)..	Rev. W. M. H. Elwyn	8	1 0	193	27·48	133
Godmanchester (Farm Hall).....	G. I. Bevan, Esq.	8	0 8	30 ?	32·04	149
Huntingdon	Mrs. C. Margetts	5	0 4	52 T	33·12	161
* " (Wistow)	Rev. T. Woodruff	5	1 6	...	31·45	...
Whittlesea Mere	R. Lunn, Esq.	8	1 0	...	29·95	...
BEDFORD.						
Amphill (Silsoe)	H. Trethewy, Jun., Esq.	5	1 2	...	31·24	...
" (Wrest Park)	Mr. G. Ford	5	1 1	...	29·94	...

DIVISION III.—SOUTH MIDLAND COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which .01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level	1880	
BEDFORD—(con.)						
†Aspley Guise (Oaklands)	E. E. Dymond, Esq.	5	1 1	433 T	28·52	163
Stotfold [Baldock]	Dr. Swaine	5	0 9	220	27·01	159
Ampthill	Mr. J. Brown	5	1 0	...	31·86	159
„ (Lidlington)	Rev. F. Veasey	5	1 0	...	31·00	159
Woburn (Hulcote Rectory)	Rev. B. Chernocke Smith	5	1 0	310 T	30·40	158
Biggleswade (Old Warden)	Mr. G. R. Allis	8	1 3	...	31·46	148
„	C. T. Newbery, Esq.	5	28 0	...	29·72	...
Potton (Wrestlingworth)	H. J. King, Esq.	5	1 0	...	28·12	169
„ (Cardington)	Mr. J. McLaren	8	0 0	106	30·13	...
„ „ (Staff gauge)	„ „	12	3 6	109	28·70	138
„ „	„ „	8	36 0	142	25·95	...
Sandy Rectory	Rev. J. Richardson	5	0 7	...	30·39	129
„ (The Lodge)	A. W. Peel, Esq., M.P.	5	1 0	...	30·07	154
Bedford	D. Robie, Esq.	5	0 4	115 T	30·80	127
„ (Clapham Park)	J. Howard, Esq., M.P.	8	1 0	200 T	30·80	...
Tempsford Hall	Col. W. Stuart	5	0 9	140 B	30·29	...
Bedford (Milton Ernest)	F. Newbery, Esq.	5	5 0	...	31·08	100
CAMBRIDGE.						
†Odsey Grange [Royston]	H. G. Fordham, Esq.	5	1 0	264 T	24·97	160
†Guilden Morden [„]	J. G. Johnson, Esq.	5	1 2	106 T	26·41	152
†Abington Pigotts [„]	Miss Foster	8	0 6	130 B	24·73	159
Pampisford Hall	Mr. Morley	5	1 0	113 T	28·43	165
Granchester Mill	J. Nutter, Esq.	5	5 0	31 T	26·64	175
Cambridge (Fulbourn Asylum) ..	Dr. Bacon	5	1 0	68 T	24·16	146
„ (W. W. Cherryhinton) ..	H. Tomlison, Esq., C.E.	5	1 0	35 T	23·02	173
„ (Beech House)	J. Nutter, Esq.	8	4 0	40 T	24·65	161
„ (Merton Villa)	G. Warren, Esq.	5	1 0	30 T	25·41	163
„ (Sidney Street)	Mr. W. E. Pain	8	60 0	92 T	23·17	168
„ (Trinity College) ..	J. W. Glaisher, Esq. F.R.S.	8	0 4	40	25·60	184
Hardwicke	Rev. J. S. Brown	5	0 7	...	26·36	102
†Cambridge Observatory	Professor Adams, F.R.S.	5	1 0	85 T	26·57	168
„ „	„ „ „	8	1 0	84 T	26·56	168
„ (Quy Hall)	Miss Francis	5	0 5	...	25·02	..
Caxton (Papworth Everard)	B. Ding, Esq.	5	1 0	127 T	33·95	140
Ely (Stretham)	Mr. H. Walters	9	4 9	...	23·66	...
„ (Littleport)	Rev. Canon Hopkins	5	1 0	...	27·29	169
Chatteris (Aylesby House)	A. S. Ruston, Esq.	8	0 6	...	30·25	174
„ (Horseway Lock)	R. Lunn, Esq.	8	1 0	...	24·46	...
March	R. Dawbarn, Jun., Esq.	5	1 0	...	30·00	122
„	R. Lunn, Esq.	...	...	...	27·55	...
„	A. Grounds, Esq.	...	2 0	...	29·97	...
Stanground Sluice	R. Lunn, Esq.	8	1 0	...	29·24	...
* March (Stags Holt)	W. C. Little, Esq.	5	1 0	15 ?	29·82	...
Upwell (Marmont Priory Lock) ..	R. Lunn, Esq.	8	1 0	...	28·14	...
„ (Euximoor House)	H. West, Esq.	5	0 8	15 ?	29·70	157
Wisbech (Coldham Hall, Elm) ..	H. J. Little, Esq.	5	1 0	12	29·63	147
„ (Bank House)	A. Peckover, Esq.	8	0 8	11	32·55	176
† „ (Observatory)	Mr. W. J. D. Ward ...	8	0 6	10 T	32·12	136

DIVISION IV.—EASTERN COUNTIES.

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which ·01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level	1880	
ESSEX.						
Canning Town [London]	Lewis Angell, Esq., C.E.	24	31 6	30 A	25·45	148
d Shoeburyness	Capt. O'Callaghan, R.A.	5	4 7	18	25·59	114
† Barking (Loxford Hall)	Mr. J. Douglas	5	1 0	...	29·91	148
Leyton Observatory	C. G. Talmage, Esq. ...	8	1 0	97	29·89	...
d Woodford (The Harts) ...	Miss Spicer	5	3 0	200 T	28·56	164
Brentwood (Sawyer's Hall Farm)	Rogers Field, Esq., C.E.	5	1 0	270 T	30·74	112
Maldon (Norton Hall)	C. Clarke, Esq.	5	2 6	130 T	27·62	112
d Waltham Abbey (Gunpdr. Factory)	The Superintendent ...	8	4 0	82 L	28·61	135
Epping (The Hemnalls)	J. Nicholl, Esq.	8	0 8	345	35·73	133
Bradwell-on-Sea (Down Hall)...	R. Page, Esq.	5	1 2	20	30·09	...
Chelmsford	F. Chancellor, Esq. ...	8	1 0	86 A	27·21	140
d Harlow (Moor Hall)	Mr. Huntley	8	1 6	273 A	27·01	159
d " (Sheering)	Rev. E. Hill	5	1 0	214 A	26·96	160
Witham (Rivenhall)	J. Taber, Esq.	5	1 0	50 T	25·69	141
d Dunmow (High Roding)	Rev. E. Maxwell	5	1 0	252 T	24·38	177
Stanstead [Bishops Stortford] ...	Harford Green, Esq. ...	5	1 0	240 T	28·08	...
Braintree (Bocking)	S. Tabor, Esq.	4	2 6	200 T	27·86	...
" (" Place)	S. Courtauld, Esq.	5	2 0	212 A	26·87	154
Earls Colne (Chalkney House)...	H. F. Hills, Esq.	5	1 0	180 T	24·71	128
Manningtree (Lawford)	O. Bendall, Junr., Esq.	5	1 0	...	22·25	148
d Dedham (Lower Park)	W. H. Penrose, Esq. ...	8	0 10	49 A	24·34	155
d Saffron Walden (Newport)	Rev. G. F. Tamplin ...	5	4 6	80 P	26·88	141
d " "	J. G. Bellingham, Esq.	5	1 0	180 A	28·04	175
SUFFOLK.						
d Nayland (Tendring Hall)	Mr. G. L. Rushmore ...	8	0 8	135 A	25·88	...
d Stutton (Alton Hall)	J. South, Esq.	4	0 6	...	22·32	...
Ipswich (Orwell Park)	Mr. J. Wallis	8	1 0	60 A	23·68	156
d Hadleigh (Boxford)	Rev. J. Byng	8	0 10	...	24·58	141
" (")	" " " "	8	0 10	...	25·04	...
Ipswich (Bishop's Hill)	G. A. Biddell, Esq., C.E.	5	1 0	104 A	23·40	...
d " (Fonnereau Road)	S. Alexander, Esq.	5	1 0	...	22·23	130
d Woodbridge (Rendlesham Hall)...	Rt Hon Lrd. Rendlesham	5	1 9	88 A	23·17	128
Ash Bocking Vicarage	Rev. M. B. Cowell	5	7 3	231 T	23·63	107
d Bury St. Edmunds (Drinkstone Pk)	Mr. G. Palmer	8	1 2	...	27·76	142
d Stowmarket (Wetherden Rec.)...	Rev. C. J. Goodhart ...	8	0 6	185 A	25·46	155
Framlingham	Mr. R. Whitehead	...	...	...	25·53	122
Saxmundham (Carleton Hall)	Mr. Briggs	8	5 0	50 T	26·16	149
d Bury St. Edmunds (Abbeygate St.)	T. C. Hinnell, Esq. ...	5	45 0	...	25·13	154
† " (Westley)	R. Burrell, Esq.	5	1 0	...	26·22	...
d† " (Barton Hall)	Mr. W. Allan	5	1 0	...	28·30	183
d† " (Culford)	Mr. J. Smith	5	1 6	...	27·92	164
d Ixworth (Walsham-le-Willows)...	Miss M. C. Martineau ..	5	1 0	...	29·33	163
Stradbroke	J. T. Catchpole, Esq. ...	5	1 6	...	26·72	161
d Botesdale (Rickinghall Rectory)...	Rev. T. F. Lloyd	5	1 9	...	26·12	125
† Ixworth (Barningham)	W. Lingwood, Esq. ...	8	0 10	25 P	23·70	...
d Halesworth	R. W. Burleigh, Esq. ...	5	1 6	60 L	23·53	143
Beccles (Ellough Rectory)	Rev. S. W. Earnshaw ..	5	1 1	...	26·20	154

DIVISION IV.—EASTERN COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Diameter	Rain Gauge.		Depth of Rain.	Days on which .01 or more fell.	
			Height Above Ground	Height Above Sea Level			
			ft.	in.	feet.	inches.	
SUFFOLK—(con.)							
†Lowestoft (Gisleham)	Rev. H. Jodrell	5	1	4	36 I	25.80	...
† „ (Carlton Colville)	G. Edwards, Esq., C.E.	8	0	9	6 I	26.00	...
D „ (Kirkley)	H. E. Miller, Esq.	5	1	0	58 A	25.37	168
D „ (Belle Vue Park)	S. H. Miller, Esq.	5	1	0	86	23.69	168
† „ (Somerleyton Hall)	Mr. Rix	8	1	0	60 I	23.91	157
„ („ Rect.)	The Meteor. Society ...	8	1	0	50	25.79	183
NORFOLK.							
D Diss	T. E. Amyot, Esq.	5	1	0	96	26.40	157
D Harleston (Rushall Vicarage) ..	Rev. C. Gape	5	1	1	123 I	28.70	183
D†Geldeston [Beccles]	E. T. Dowson, Esq.	5	1	0	38 A	24.38	181
„ „ [„]	„ „ „	8	1	0	38 A	24.17	...
D „ Rectory [Beccles]	Rev. D. Gillett	5	1	0	61 A	25.64	163
Long Stratton (Hapton)	Rev. J. M. Du Port ...	...	...	...	...	24.75	...
Wymondham (Mulbarton)	„ „ „	...	...	...	...	26.74	...
Watton	„ „ „	...	...	...	...	31.94	...
„ (Ovington)	Rev. C. J. Evans	5	0	4	...	28.73	...
D†Downham Market (W. Dereham) ..	Mr. C. Blanchfield	5	0	11	20	28.97	178
†Stoke Ferry (Werham)	Rev. J. M. Du Port ...	5	6	0	66 I	29.33	...
Swaffham (Pickenham Hall)	E. A. Applewhaite, Esq. ..	5	1	0	160 I	31.08	161
Outwell Sluice	R. Lunn, Esq.	9	...	...	...	24.47	...
Yarmouth (Sailors' Home)	The Meteor. Council ...	8	4	0	12	24.79	169
„ (Halvergate Hall)	Rev. J. M. Du Port ...	5	3	3	48 A	24.31	130
Norwich (Eaton)	J. Pymar, Esq.	6	1	0	...	26.93	...
D „ (Postwick)	Rev. W. Vincent	5	1	0	20 ?	24.23	158
„ (Carrow House)	Mr. H. Jones	5	4	0	30	24.23	121
†Downham Market (Fincham)	Rev. J. M. Du Port ...	3	4	0	50 I	30.88	...
†Norwich (Thorpe St. Andrews) ..	W. Birkbeck, Esq.	5	1	0	137 I	28.22	157
„ (St. Catherine's Close) ..	Mrs. Evans	5	2	3	120	27.00	158
D „ (Essex Street)	F. Dix, Esq.	9	2	6	85 I	26.54	144
D*Swaffham (Grammar School)	C. J. Drury, Esq.	5	1	10	242 A	34.49	171
D „	W. H. Plowright, Esq. ..	5	5	0	250 I	33.33	162
†Mattishall	Rev. J. M. Du Port ...	8	1	2	165 A	28.91	188
D†Norwich (Honingham Hall)	Lady Bayning	5	0	6	110 I	29.91	175
D „ (Cossey)	H. Culley, Esq.	5	1	0	...	27.69	184
D Sprowston (Oak Lodge)	T. C. Hardy, Esq.	5	1	0	...	26.33	174
Hockering	Rev. J. M. Du Port ...	...	...	...	...	29.46	...
D†Filby	Mr. Crisp	5	2	4	11	25.62	134
East Dereham	G. H. Cooper, Esq.	8	3	0	161	29.15	147
Drayton	Rev. J. M. Du Port ...	5	1	2	...	28.50	...
Swaffham (Dunham)	„ „ „	...	...	...	...	31.63	180
St. Germans (Outlet Syphons) ..	R. Lunn, Esq.	8	...	...	...	29.86	...
Salhouse	Rev. J. M. Du Port ...	...	...	...	...	26.55	...
D Terrington	J. T. Seccombe, Esq., M.D ..	5	1	0	17 A	32.68	149
Felthorpe	Major Bourchier	5	1	0	75	28.14	166
D Reepham (Hackford)	W. D. Bircham, Esq. ...	5	1	0	...	28.13	168
Cawston	Rev. T. H. Marsh	5	1	0	120 I	28.48	188
North Walsham (Worstead)	Mrs. Cooke	5	0	9	...	26.17	149

DIVISION IV.—EASTERN COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge			Depth of Rain.	Days on which ·01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level	1880	
NORFOLK—(con.)						
North Walsham (Dilham)	Rev. J. M. Du Port	...	ft. in.	feet.	inches.	
†Lynn (Hillington Rectory)	Rev. H. Ffolkes.....	8	1 0	89	31·70	199
d† „ { „ School)	„ „	5	3 6	94	31·53	199
„ { „ Hall).....	Mr. Platt	5	1 0	93	31·77	...
North Walsham (Knapton)	Rev. J. M. Du Port	...	...	...	30·52	...
d Hindringham	Mr. S. Cushing	5	1 0	...	28·88	177
Holt (Letheringsett Hall)	W. H. C. Hardy, Esq..	8	1 0	...	29·40	130
Cromer (Colne Lodge)	J. Cooper, Esq., M.D...	5	1 0	90	28·18	144
Holkham.....	J. Davidson, Esq.	12	0 0	35	29·20	...
d „	„ „	12	4 0	39	27·77	149
d Hunstanton Hall	Mr. Nisbet	11	3 8	60	31·05	...
d Wells-next-the-Sea	H. R. Rump, Esq.....	5	1 0	16	28·96	192

DIVISION V.—SOUTH-WESTERN COUNTIES.

WILTS.

d Landford	J. R. Wigram, Esq. ...	5	1 10	165	32·09	181
d†Salisbury (Alderbury)	Rev. R. S. Hutchings...	5	0 8	263	30·54	155
d† „ (West Dean)	Rev. W. L. W. Eyre...	5	1 0	137	34·11	151
„	W. Hussey, Esq.	5	1 6	160	31·61	177
„ (Wilton House).....	Mr. Challis	8	0 5	180	31·32	162
d Codford (Bapton)	J. Dean Willis, Esq. ...	5	1 0	301	32·21	165
Warminster (Rye Hill).....	Rev. T. A. Preston ...	8	2 0	450	37·32	...
d Salisbury Plain (Chitterne House)	R. Hayward, Jun., Esq.	11	4 0	380	30·53	160
Warminster	E. Cruse, Esq.	5	1 0	387	32·46	173
„ (Downside)	W. J. Stent, Esq.	8	3 0	439	33·63	162
Ludgershall [Andover]	Rev. W. H. Awdry ...	8	0 8	422	31·87	181
d Trowbridge (Steeple Ashton Vic.)	Rev. A. O. Hartley ...	5	1 0	240	28·21	165
d „ (Rodney House).....	W. J. Mann, Esq.	5	1 1	140	28·67	150
d Pewsey	Mr. J. P. Robins	5	1 0	...	29·68	163
d Trowbridge (Holt)	Major F. B. Gritton ...	5	1 2	120	30·92	180
Devizes (Southgate House)	J. G. S. Cunningham, Esq.	8	0 10	436	30·60	196
d „ (Bishop's Cannings).....	Rev. C. W. Hony	5	1 0	446	30·09	169
d Chippenham (Lacock)	Miss Awdry	5	0 11	250	31·97	177
d†Marlborough (The Green).....	Rev. T. A. Preston ...	5	1 2	472	33·24	181
„ („)monthly	„ „ „	5	1 2	472	32·46	...
Corsham	„ „ „	5	1 0	350	33·82	...
d Calne (High Street)	Mr. H. Wilkins, Junr.	5	3 6	...	30·80	183
d „ (Compton Bassett)	Mr. J. Allen	8	1 0	400	31·82	181
d Swindon, New.....	J. H. Preece, Esq.....	8	0 4	378	34·50	139
„ (Pen Hill)	H. Arkell, Esq.	5	0 10	400	30·96	...
Thames' Head [Cirencester].....	J. H. Taunton, Esq., C.E.	8	4 0	350	34·06	162

DORSET.

Portland (Verne Citadel)	Col. Cox, R.E.	12	20 0	473	24·68	153
d Weymouth (Langton Herring)...	Rev. C. H. Gosset	8	1 0	200	30·06	165
d† „ (Osmington Lodge)...	Col. Hall	5	1 0	225	34·64	165

DIVISION V.—SOUTH-WESTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which ·01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level	1880	
			ft. in.	feet.	inches.	
DORSET—(con.)						
† Abbotsbury	Mr. A. Dight	5	3 6	150	33·52	...
Poole	F. Styring, Esq.	5	1 1	6	35·19	126
D Bridport (West Street)	G. M. Evans, Esq.	8	1 3	...	32·95	151
D Bere Regis (Bloxworth)	Col. Cambridge	5	2 0	150 ?	32·34	...
D Beaminster Vicarage	Rev. Canon Codd	5	0 10	...	41·48	178
D Blandford (Whatcombe)	J. Mansel-Pleydell, Esq.	5	0 4	320 B	39·02	113
D „ (Bingham's Melcombe)	Rev. C. W. Bingham... ..	5	1 3	300 ?	39·52	172
Cerne Abbas (Minterne Rectory)	Rev. H. Pix	5	2 0	566 T	43·06	171
D „ „ (Melbury)	Mr. T. C. Elliott	12	2 9	...	38·00	115
D*Wimborne Minster (Chalbury)... ..	Rev. G. H. Billington.. ..	5	2 0	338 T	30·57	154
D Sherborne (Folke Rectory)	Rev. T. H. Philpott	5	0 11	...	36·15	170
D „ „ School	E. Cleminshaw, Esq.... ..	5	1 0	200 T	33·78	173
Cranborne (Pentridge)	Rev. S. G. Gillum	5	1 1	300 T	36·03	159
D Shaftesbury	T. Ackland, Esq.	5	1 1	722 T	37·24	159
D Gillingham	I. Stephens, Esq.	5	1 0	300	36·43	170
DEVON.						
Kingsbridge (Prawle Point)	The Meteor. Council	8	1 9	350	27·87	184
† „ (Bolt Tail)	G. Balkwill, Jun., Esq.	5	2 0	297 L	31·69	...
D† „ (Fore St. Hill).. ..	G. Fox, Esq.	5	1 0	63 B	38·15	159
D Dartmouth (Strete)	Dr. Madden	8	1 0	200 B	33·08	143
D Plymouth (Navigation School) (52)	J. Merrifield, Esq. LL.D.	8	9 2	75 T	28·90	169
D Devonport (Rowdens Res.)	H. Francis, Esq.... ..	5	1 0	202 T	31·57	188
† Ivybridge	Dr. Liddell	10	3 0	175 B	47·43	198
Plympton (Hemerdon)	Rev. G. Woodcombe	5	1 0	360	49·82	...
Paignton (Hollacombe)	J. Greenfield, Esq.... ..	5	7 0	70 ?	33·35	198
D „ (Madeira Cottage)	P. Symons, Esq.... ..	5	6 0	30 T	36·28	...
† Dartmoor (Lee Moor)	W. L. Martin, Esq.	5	0 9	860 T	55·17	...
Bere Ferrers	Rev. F. T. W. Wintle.	5	1 0	100	39·23	186
D† Torquay (Lamorna)	W. Pengelly, Esq. F.R.S	5	1 0	200 T	35·88	176
D „ (Rocombe House)	H. Hearder, Esq.	5	1 0	400 T	33·25	170
D* „ (Castle College)	C. J. Harland, Esq.	5	1 0	167 T	35·36	186
D† „ (Babbacombe) <i>Snowdon</i>	E. E. Glyde, Esq.	5	1 0	294 T	37·52	179
Walkhampton (Lowery)	H. Francis, Esq.	8	1 0	...	57·90	...
D Ashburton (Holne Vicarage) (33)	Rev. J. Gill	5	1 0	650 B	64·41	211
Abbots Kerswell (Court Grange)	Mrs. Hare	5	1 0	130 B	44·18	184
D† Ashburton (Druid House) ... (32)	Fabyan Amery, Esq.... ..	5	1 0	572 T	51·69	182
„ (Leusden Vicarage)	Rev. F. Gilbert White	5	1 0	800	55·48	195
D Kingsteignton (Teignbridge Ho.)	F. H. Plumpton, Esq.... ..	5	1 0	27 T	35·96	162
Teignmouth (Bitton)	W. C. Lake, Esq. M.D.	5	1 0	45	34·11	166
† „ (Lower Reservoir)	„ „ „	5	1 0	140 L	41·77	187
D „ (Woodway)	G. W. Ormerod, Esq.... ..	5	1 0	235	36·80	178
Princetown	The Meteor. Society	5	1 0	1360	75·85	192
D† Tavistock (Public Library) ... (38)	Mr. W. Reynolds	8	20 0	283 T	43·21	165
*† „ (Mount Tavy)	H. Clark, Esq.	5	1 0	316 T	46·67	...
D† „ (Kilworthy Lane) (67)	Mr. W. Merrifield	5	1 0	362 T	47·06	174

NOTE.—The numbers in parentheses in this and the three following pages refer to a Map inserted between pages 148 and 149 of *British Rainfall*, 1872.

DIVISION V.—SOUTH-WESTERN COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1880	Days on which 1/10 or more fell.
		Diameter.	Height Above Ground.		Height Above Sea Level	
			ft.	in.	feet.	inches.
DEVON—(con.)						
† Ilminster (Middlecott House) (23)	Alfred Lyon, Esq.	9	3	6	649 T	48.49 179
Princetown (Cowsie Valley)	H. Francis, Esq.	8	1	6	1400 ?	71.90 ...
Ashburton (Widecombe Vic.) (24)	Rev. J. Williams	5	1	0	810	50.07 ...
D „ (Cator Court)	F. H. Firth, Esq.	5	1	0	1060 T	63.15 213
D Dawlish	Capt. Strangways, R.N.	5	1	0	120 B	36.20 172
† Milton Abbot (Endsleigh) ... (26)	Mr. W. Prout	5	1	0	180 ?	45.88 ...
† Bovey Tracey	J. Divett, Esq.	5	0	6	94 A	42.19 210
† Exmouth (Budleigh Salterton)...	Dr. R. Walker	5	4	0	33	31.04 161
D „ (East Budleigh)	R. H. Lipscomb, Esq. ...	5	1	0	70 A	30.06 144
Coryton (Lew Down)	Mr. T. Symons	5	4	0	445	47.54 199
D Polapit Tamar [Launceston] (76)	E. Coode, Esq.	12	3	0	...	38.72 222
† Sidmouth (Sidmount)	Dr. Radford	5	1	0	149 A	31.74 179
† Topsham (Clyst St. George)	Rev. H. T. Ellacombe..	5	1	3	76 T	27.90 ...
† Seaton (White Cliff Glen)	T. F. A. Byles, Esq. ...	5	3	6	126 B	32.18 ...
† Cleveland [Lyme Regis]	E. L. Ames, Esq.	5	1	11	465 A	35.85 172
† Exeter (Devon & Exet. Inst.) (17)	Mr. E. Parfitt	6	13	7	155 A	33.26 135
D „ (Manston Terrace) ... (18)	Miss Dymond	5	1	0	166 A	32.93 169
D Uplyme [Lyme Regis]	H. Tucker, Esq.	5	1	0	120 B	33.73 171
Colyton	W. R. Fox, Esq., R.N.	5	1	0	100	34.29 ...
† Okehampton (Oaklands)	W. H. Holley, Esq. ...	5	1	0	521 T	48.88 203
† Exeter (Brampford Speke) ... (13)	W. H. Gamlen, Esq. ...	5	1	0	140 T	34.53 186
„ { „ „ } ... (13)	„ „ „	8	0	3	140 T	34.18 ...
„ { „ „ } ... (13)	„ „ „	5	1	0	140 B	32.46 ...
D Holsworthy (Clawton)	W. W. Melhuish, Esq. ..	5	1	1	400	38.62 171
D Honiton (Gittisham)	C. Hardy, Esq.	5	1	0	...	35.75 150
D Hele (Strath Culm)	C. R. Collins, Esq.	8	0	6	159 A	30.42 124
Clyst Hydon	Mrs. Huyshe	...	1	0	200 A	29.94 141
D Bradninch Vicarage	Rev. W. A. Strong ...	5	1	0	316 B	36.32 201
D Hatherleigh (Winsford)	Mr. A. Muirhead	5	...	...	...	41.89 ...
Tiverton (Cove)	W. N. Row, Esq.	11	0	6	450 ?	43.56 ...
D „ (Rose Bank)	H. B. Sharland, Esq. ...	5	1	0	280	40.45 196
„ (Ivy Place)	H. S. Gill, Esq.	5	6	0	270	38.65 188
† Torrington (Langtree Wick) (72)	E. A. Bazely, Esq.	5	1	0	451 T	44.58 ...
† „ Vicarage	Rev. S. Buckland	5	1	0	323 T	42.01 177
D „ (Stevenstone)	R. H. Lipscomb, Esq. ...	5	1	0	400	41.42 173
D „ (Little Silver)	„ „ „	5	1	0	400 T	41.02 203
D Bampton (Huntsham)	C. A. W. Troyte, Esq. ..	8	0	6	600 B	43.59 177
South Molton (Rose Ash) ... (60)	Lieut. Col. Davy	8	1	0	650 T	41.04 183
D Bideford (Heale House Littleham)	R. Sanders, Esq.	8	1	0	280 B	39.74 183
D South Molton (East Street) (59)	N. C. Hatherly, Esq. M.D	5	1	0	430 B	49.16 175
„ „ (Castle Hill) ... (4)	Mr. D. Wilson	12	3	1	300	40.70 122
*† Bideford (Horwood)	Rev. J. Dene	5	1	0	288 T	36.74 181
*† „ (Northam)	Rev. M. D. Churchward	5	1	0	173 A	36.66 181
† Barnstaple	Mr. Knill	8	1	0	31 A	42.99 177
† Ilfracombe Hotel	Mr. W. Tattam	12	9	0	34	33.19 178
† Lynton (Lee Abbey)	C. F. Bailey, Esq.	5	0	6	320	44.94 ...
*† Lymouth (Glenthorne)	Mrs. Halliday	5	0	9	93	51.03 180

DIVISION V.—SOUTH-WESTERN COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which ·01 or more fall.
		Diameter	Height Above Ground	Height Above Sea Level	1880	
			ft. in.	feet.	inches.	
CORNWALL.						
†Penzance (South Parade)	W. H. Richards, Esq.	12	3 0	94 T	43·04	...
D " (St. Clare)	Rev. Preben. Hedgeland	5	0 9	211 T	41·54	197
" (Poltair)	Col. Trelawny	5	1 0	243 B	43·07	195
Marazion	T. W. Field, Esq.	5	2 0	30 P	37·99	177
Falmouth (Carelew)	Mr. J. Simmons	5	0 9	...	42·79	120
Redruth (Trewirgie)	A. H. Jenkin, Esq.	5	1 0	400 T	44·90	207
D†Truro (Royal Institution)	Mr. Newcombe	5	40 0	56 A	38·09	178
D Probus (Lamellyn)	H. Tresawna, Esq.	5	0 6	...	41·02	148
St. Agnes	Mr. Opie	5	1 3	278 B	35·77	149
D Rame Rectory [Plymouth]	Rev. W. C. Evans	5	1 0	300 T	31·83	180
St Austell (St. Mewan)	Rev. G. L. Woolcombe	5	1 0	275 T	43·99	178
* " (Cosgarne)	C. Truscott, Jun., Esq.	5	1 0	194 A	43·47	215
" (Polcarne)	J. Coode, Esq.	5	1 0	206 T	48·77	151
D†* " (Trevarna)	W. Coode, Esq.	5	0 6	300 A	44·17	210
Par Station (Penellick)	W. E. Geach, Esq.	5	0 9	240 B	30·98	...
D Maker Vicarage [Devonport] ..	Rev. P. H. Newnham	5	1 2	290 T	32·29	203
Empacombe [Devonport]	S. Harvey, Esq.	5	1 6	20	32·21	168
D St. Johns [Devonport]	Rev. J. H. Kirwan	5	1 0	20	32·64	175
D†Newquay	Mr. W. H. Tregidgo	6	1 9	90 B	34·36	139
D†Liskeard (Dean Terrace) ... (47)	S. W. Jenkin, Esq., C.E.	5	1 1	375 A	45·67	210
D†Saltash (Pentillie Castle) ... (46)	Mr. C. Edwards	5	1 3	150 B	43·25	166
†Bodmin (Castle Street) ... weekly	Capt. Liddell, R.N.	5	0 1	315 T	45·80	...
† " { " " }	" " "	5	1 0	316 T	44·49	197
D† " { " " }	" " "	8	2 4	318 T	43·12	197
D† " (Fore Street)	Mr. A. Hambly	8	2 6	336 T	45·21	198
Liskeard (St. Cleer)	S. W. Jenkin, Esq., C.E.	5	1 1	620 A	45·76	...
D†Callington (Hingston Down) (39)	Capt. Richards	5	3 0	850 T	42·47	219
†Launceston (Altarnun)	Rev. J. Power	5	1 0	570 B	53·87	180
† " (Hexworthy) ... (27)	H. M. Harvey, Esq.	5	2 7	410 T	43·97	180
D " (South Petherwin)	Rev. C. G. May	5	0 4	470 B	56·62	187
D Stratton (Week St. Mary)	Rev. G. H. Hopkins	8	1 3	510 T	41·18	186
SOMERSET.						
Crewkerne (Seaborough)	J. T. Stevens, Esq.	5	1 3	240 P	35·15	158
Chard (Cricket St. Thomas)	RtHn. Viscount Bridport	5	1 0	400 B	38·13	164
D Crewkerne (Bincombe House) ..	F. J. Sparks, Esq.	5	1 2	250 T	36·33	139
D Yeovil (West Coker)	Mr. A. Spurr	5	1 0	236 A	34·67	168
"	J. Curtis, Esq.	5	1 0	...	35·68	163
D Ilminster (White Lackington) ...	Rev. G. T. Gowing	5	1 0	136 A	35·67	172
D South Petherton	W. Blake, Esq.	8	0 8	150 P	30·88	174
Wellington (Sunnyside)	W. Elworthy, Esq.	5	1 0	...	32·34	139
Hebrewers (Walrond Park)	J. Ostler, Esq.	5	0 8	116 T	31·12	119
*Taunton (Fullands School)	W. Reed, Esq.	5	1 4	...	30·85	155
D Milverton	J. H. Bere, Esq.	5	1 0	335 P	39·90	167
D " (Halse Rectory)	Rev. W. S. Thomas	5	1 0	245	34·37	176
D " (Fitzhead)	E. H. Knollys, Esq.	5	1 0	200 P	37·34	174
D Wiveliscombe	Mrs. B. Boucher	5	1 2	...	32·83	131
" (Withycombe Ho.)	R. P. Mogridge, Esq.	5	1 0	800 B	40·37	...

. DIVISION V.—SOUTH WESTERN COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which ·01 or more fell.
		Diameter	Height Above Ground	Height Above SeaLevel	1880	
SOMERSET—(con.)						
			ft. in.	feet.	inches.	
Cothelston House	C. E. J. Esdaile, Esq...	5	1 0	500	36·25	139
1) Glastonbury (Street)	W. S. Clark, Esq.	8	1 0	70	33·46	184
„ { „ }	J. Clark, Esq.....	...	1 6	60	32·73	...
„ { „ }	R. Impey, Esq.	5	21 8	60	28·68	...
1) Exford Rectory	Rev. J. G. Howes	5	1 0	905 B	58·29	215
1) Dunster (The Rectory)	Rev. J. Utten Todd ...	5	1 0	150 B	37·79	133
Minehead (Porlock)	Miss L. Hook.....	5	1 2	100	49·10	124
Wells	Mr. R. S. Manning ...	...	35 0?	...	34·86	157
1) Frome (Mells Rectory)	Rev. G. Horner	5	1 0	344 A	39·90	198
1) Burnham.....	Capt. Estlin	5	1 0	18 A	30·53	173
Radstock (Downside).....	The Meteor. Society ...	8	0 6	592	43·40	183
Chewton Mendip (The Priory)...	Mr. J. Dart	5	1 5	500	42·03	159
E. Harptree (Sherborne Reservoir)	Bristol Water Works...	5	1 0	338 T	38·93	163
Axbridge (Winscombe).....	Rev. R. F. Follett	8	1 0	150 B	34·11	139
Chew Magna	Bristol Water Works...	5	1 0	160 T	37·82	160
1)† Bath (Royal Literary Institute).	C. P. Russell, Esq.....	6	8 0	75 A	29·91	153
„ (Queen's Parade)	H. Stokes, Esq.	5	1 0	100	32·59	183
1) „ (Weston) .....	.....	5	10 0	205 A	33·09	167
1) Batheaston Reservoir.....	A. Mitchell, Esq.	6	2 0	226 T	34·20	145
Barrow Gurney Reservoir	Bristol Water Works...	5	1 0	320 T	38·27	163
Bristol Docks	T. Howard, Esq., C.E..	8	15 3	36 A	33·25	157

DIVISION VI.—WEST MIDLAND COUNTIES.

GLOUCESTER.

Bristol (Small Street)	A. J. Alexander, Esq..	12	33 10	49	36·39	165
† Clifton (South Parade)	Dr. G. F. Burder	8	0 6	192 A	37·37	157
Bristol (Over Court)	R. C. C. Lippincott, Esq..	...	...	...	37·80	...
„ („ „)	„ „ „ „ „ „ „ „ „ „	...	...	...	36·99	...
1) Fairford (Kempsford)	R. A. Iles, Esq.	5	0 8	...	31·80	151
1) Berkeley (Salter Street)	J. H. Cooke, Esq.	5	8 0	60	30·09	143
1) Nailsworth (Spring Hill)	E. P. Westley, Esq. ...	8	2 0	160?	40·01	173
1) Berkeley (Sharpness New Docks)	W. B. Clegram, Esq., C.E.	5	3 6	50	37·47	166
1) Lechlade	T. Arkell, Esq.	5	0 10	...	31·56	158
1) Cirencester (The Firs)	F. Bravender, Esq. ...	5	0 8	352 A	37·35	...
„ (Claremont Place) ..	R. Gorton, Esq.	8	1 0	355	38·10	174
Stroud (Brimscombe Port)	J. H. Taunton, Esq., C.E.	8	10 0	200 A	36·47	137
„ (Cain's Cross)	W. B. Baker, Esq.	5	1 0	120 T	34·78	132
1) „ (Upfield)	Miss Stanton	5	1 0	226 A	34·36	163
1) Fairford (Hatherop Rectory) ...	Rev. R. P. Davies	8	1 3	412 A	35·11	144
1) Frampton-on-Severn (Saul Lodge)	W. B. Clegram, Esq., C.E.	5	3 6	42 A	33·86	198
1) Newnham-on-Severn	D. J. Wintle, Esq. ...	5	3 0	25?	38·43	156
1) Westbury-on-Severn Vicarage...	Mrs. C. J. Jones	5	0 8	...	35·81	164
1) Great Barrington [Burford]	J. P. Wakefield, Esq...	8	1 0	416 A	33·31	128
Northleach (Yanworth)	T. Arkell, Esq.	5	1 0	...	35·49	...
„ (Sherborne Park) ...	Hon. R. Henley Eden..	5	1 0	405	36·43	...
Gloucester (Quedgeley House)...	Capt. T. C. Hayward...	5	1 0	50?	32·33	...

DIVISION .VI.—WEST MIDLAND COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which "01 or more fell.	
		Diameter	Height above Ground.		Height above Sea Level		1880
			ft.	in.	feet.	inches.	
GLOUCESTER—(con.)							
D Gloucester (Witcombe Res.).....	R. Read, Esq.	8	3	0	297	37·48	132
D „ (Llanthony Lock) ...	H.J. Marten, Esq., C.E.	5	1	2	39 A	30·27	154
D „ (Barnwood)	Dr. A. J. Wood	8	1	8	60 P	33·13	...
D Mitcheldean (Edge Hill House)..	W. H. M. Phillips, Esq.	5	1	6	750 T	39·23	165
D Gloucester (Maisemore Lock) ...	H.J. Marten, Esq., C.E.	5	1	1	40 A	30·77	186
D Cheltenham (Battledown).....	Sir Brook Kay, Bt. ...	5	0	6	392 A	33·22	174
„ (Northfield)	W. McLandsboro', Esq.	...	...	...	...	34·24	149
„ (Hewletts Res.) ...	„ „ „	8	0	6	232 L	34·71	149
„ (Montpellier Lodge)	Rev. H. Kynaston.....	5	1	0	200 T	34·08	165
„ (Southam Villa) ...	R. Tyrer, Esq.	5	1	0	184 A	33·72	177
D Tewkesbury (Upper Lode)	H.J. Marten, Esq., C.E.	5	1	0	41 A	30·10	152
D Moreton-in-Marsh (Frogmore)...	W. Arkell, Jun., Esq..	5	0	9	...	32·46	171
HEREFORD.							
D Ross (Rocklands)	J. M. Herbert, Esq. ...	8	1	11	108 A	37·04	155
D† „ (The Graig)	H. Southall, Esq.	5	1	0	213 A	35·49	168
Longtown Vic. [Abergavenny]...	Rev. C. L. Eagles	5	0	8	...	42·32	...
Bryngwyn	J. Rankin, Esq., M.P..	5	0	10	420 B	34·45	153
D Much Marcle (Caerswall)	T. Charles, Esq.....	5	2	0	423 B	31·09	157
Whitfield	Mr. R. Grindrod	5	0	6	230	33·75	135
D Ledbury (West Bank)	T. E. Wheatley, Esq...	5	1	6	350	34·45	139
D† Hereford (Richmond Place)	F. Anderson, Esq.....	8	4	9	188 A	31·49	164
„ (Hagley Park)	A. Hutchinson, Esq. ...	5	0	6	300 B	30·75	...
D Ledbury (Colwall).....	Mrs. Devas	5	1	0	640 P	34·34	148
D „ (Canon Frome Vic.) ...	Rev. M. Hopton.....	8	1	3	163	29·97	157
D Hereford (Burghill)	T.A. Chapman, Esq. M.D	5	1	4	275	29·89	153
D „ (Thinghill, Withington)	H. Higgins, Esq.	5	1	0	200 P	28·91	156
D Staunton-on-Wye	Rev. H. W. Phillott ...	5	1	1	255 B	33·67	164
Bodenham (Hampton Court).....	J. H. Arkwright, Esq..	8	1	3	212 B	32·32	127
D Kington (Lynhales) ...	S. Robinson, Esq.	8	1	0	...	39·81	168
Pembridge (Marston).....	H. Langston, Esq.....	5	1	5	345	34·23	165
D Leominster (Farm)	J. Southall, Esq.	5	1	0	240	33·45	151
D Stoke Bliss	Rev. G. E. Alexander..	5	1	0	400 B	33·68	164
SHROPSHIRE.							
Burford House [Tenbury].....	Rt.Hon.Lord Northwick	5	1	2	193 A	31·91	...
Bishop's Castle (Castle Street)...	E. Griffiths, Esq.	5	4	0	750 T	36·59	167
D „ „ (More Rectory)...	Rev. A. S. Male	5	1	0	640 A	35·92	193
D Much Wenlock (Larden Hall) ...	Miss F. Rouse Boughton	8	1	3	658 A	36·92	182
Church Stretton (Cardington) ...	Rev. W. Elliot	5	1	0	700 A	35·57	164
„ „ (Preen Manor)...	A. Sparrow, Esq.	5	0	9	700 T	35·59	178
D „ „ (Church Preen)..	Rev. F. H. Paley	5	0	10	750 T	36·02	187
D „ „ (Woolstaston)...	Rev. E. D. Carr.	5	1	0	807 A	35·10	191
D Middleton in Chirbury	Rev. W. Brewster.....	5	1	2	625 B	35·98	181
Coalbrookdale (Horsehay).....	G. Rooum, Esq.....	5	3	0	...	28·65	...
D Shiffnal (Haughton Hall).....	The late Rev. J. Brooke	5	3	6	353 A	31·84	189
Wellington (Old Hall School) ...	Dr. J. E. Cranage	5	1	6	...	30·93	128
Shrewsbury.....old gauge	Marshall & Co.	10	5	6	240	29·07	142

DIVISION VI.—WEST MIDLAND COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which 01 or more fell.
		Diameter	Height above Ground.	Height above Sea Level	1880	
			ft. in.	feet.	inches.	
SHROPSHIRE—(con.)						
Shrewsbury <i>new gauge</i>	Marshall & Co.	5	2 7	238	29·08	143
„ (Fitz Manor)	R. Middleton, Esq. ...	5	2 6	287 B	27·10	...
^D „ (Leaton Vicarage) ...	Rev. E. V. Pigott	5	1 0	267 T	34·15	176
^D Wem (Sansaw Hall)	F. G. Tippinge, Esq....	5	1 0	310 T	34·14	157
Oswestry (Hengoed)	Rev. A. R. Lloyd	5	6 0	470 A	41·04	...
Market Drayton (Buntingsdale).	Mrs. Tayleur	5	1 0	276 A	34·49	151
„ „ (Adderley)	Rev. Athelstan Corbet..	5	0 9	245 B	36·82	...
Whitchurch	A.B. George, Esq., M.D.	5	3 6	...	41·27	124
STAFFORD.						
Kinver Gram. Schl. [Stourbridge]	E. B. Marten, Esq., C.E.	8	0 6	180 L	31·76	165
Dennis [Stourbridge]	Mr. C. Webb	8	6 6	270 B	31·82	169
Walsall	E. B. Marten, Esq., C.E.	8	4 0	463 A	33·95	175
Patshull Gardens	Mr. Phillips	8	1 5	400	29·20	...
^D Wolverhampton (Thorganby Vil.)	G. C. Broom, Esq., C.E.	8	3 4	459 A	33·54	174
^D „ (Wrottesley) ...	Mr. E. Simpson	8	1 0	500	29·48	150
^D Tamworth (Lichfield Street).....	W. Arnold, Esq.	5	1 0	160 ?	30·48	161
^D Lichfield Museum ...	Mr. J. P. Roberts	5	5 8	220 A	32·42	167
^D Weston-under-Lyziard [Shiffnal]	Hon. Rev. J. Bridgeman	3	0 10	...	32·00	182
^D Penkridge (Rodbaston)	H. Ward, Esq.	5	1 0	260 ?	31·71	181
^D Church Eaton (Shushions Manor)	T. James, Esq.	5	1 0	325 L	30·55	192
Alrewas (The Cottage)	E. Sellick, Esq.	5	2 0	...	28·70	...
^D Burton-on-Trent (Grammar Schl)	C. U. Tripp, Esq.	5	1 0	160 T	29·68	186
^D „ „ (Shobnall)	R. W. Abbotts, Esq....	5	6 0	150 T	28·98	153
^D „ „ (Horninglow)...	„ „ „	5	4 0	150	30·22	187
^D Stoke (Barlaston)	W. Scott, Esq.	5	1 0	520 T	36·64	159
^D † Cheadle (The Heath House)	J. C. Philips, Esq....	5	1 0	647 A	37·37	179
^D † „ (Teau Vicarage)	Rev. G. T. Ryves	5	1 0	470 T	37·80	179
^D „ (Farley)	C. L. Wragge, Esq. ...	8	1 1	638 A	38·19	173
^D „ (Oakamoor)	„ „ „	5	1 0	346 A	39·84	158
Stoke (Stanley Reservoir).....	W. H. Stubbs, Esq., C.E.	5	3 1	550 T	30·75	114
Alstonfield Vicarage	Rev. W. H. Purchas...	5	1 0	910 T	44·71	148
^D Leek	S. Eyre, Esq.	3	6 0	538 T	39·59	161
„ (Rudyard)	W. H. Stubbs, Esq., C.E.	5	12 7	500 T	32·26	107
WORCESTER.						
Blockley	R. B. Belcher, Esq. ...	5	1 0	500 ?	34·55	156
Northwick Park	Rt Hon Lord Northwick	8	1 3	292 A	36·50	...
^D Evesham (Lansdowne)	R. Burlingham, Esq....	6	5 6	124 B	30·50	126
West Malvern	A. H. Hartland, Esq....	8	1 6	850 B	35·74	170
^D Great Malvern (Hornycold Ter.)..	W. Sandoe, Esq.	5	0 7	550 L	34·57	153
„ „	J. E. Palmer, Esq....	5	1 0	357 A	34·41	...
„ „ (Madresfield) ...	Rev. G. S. Munn	5	1 4	120 ?	30·56	...
^D Worcester (Diglis Lock)	H. J. Marten, Esq., C.E.	5	1 0	49 A	31·16	146
^D „ (St. John's)	G. B. Wetherall, Esq..	5	1 0	...	32·73	168
^D „ (Bevere Lock)	H. J. Marten, Esq., C.E..	5	1 1	52 A	28·35	146
^D Droitwich (Holt Lock)	„ „ „	5	1 1	55 A	29·68	141
^D Tenbury (Orleton)	T. H. Davis, Esq.	5	0 9	200 ?	35·69	180

DIVISION VI.—WEST MIDLAND COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1880	Days on which ·01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level		
			ft. in.	feet.	inches.	
WORCESTER—(con.)						
» Bromsgrove (Stoke Reformatory)	Mr. J. Salter	5	1 3	225 L	28·27	134
» „ (Tardebigge Res.) ..	W.B. Clegram, Esq. C.E.	5	3 0	433 T	31·90	181
» Stourport (Lincombe Lock).....	H.J. Marten, Esq., C.E.	5	1 0	62 A	32·23	185
» „ (Hartlebury)	J. Watson, Esq.	5	1 0	300	33·30	...
» Bromsgrove (Upper Bittal Res.)..	W.B. Clegram, Esq. C.E.	5	3 0	518 T	32·82	155
» Stourbridge (Pedmore)	E. B. Marten, Esq., C.E.	8	0 11	350 A	32·67	173
» „ (Longlands)	„ „ „	8	1 0	260 A	32·09	161
WARWICK.						
» Shipston (Compton Wynyates)...	J. Sargent, Esq.	5	2 6	...	34·30	175
» Radway (Ivy Lodge)	Rev. G. Miller	5	1 1	530 T	36·04	182
» Kineton (Penny Compton)	E. Knott, Esq.	5	4 0	430	33·41	...
» Stratford-on-Avon (Avonside) ..	C. Lucy, Esq.	8	0 8	123 T	29·75	...
» Southam (Stockton)	Rev. W. Tuckwell.....	5	1 0	289 B	31·31	164
» Leamington (Upper Parade).....	J. Barnitt, Esq.	5	0 8	195 A	30·83	165
» Henley-in-Arden (Barrells Park)	T. H. G. Newton, Esq.	5	1 0	300 A	33·45	169
» Leamington (Blackdown Hill) ...	A. S. Field, Esq.	5	0 9	270 T	32·35	159
» Kenilworth (Lynton Villa).....	F. Slade, Esq., C.E. ...	8	1 0	290 A	34·35	177
» Rugby School	W. G. Michell, Esq. ...	5	1 3	383 T	36·68	167
» Coventry (Ryton on Dunsmore) ..	C. Twamley, Esq.	5	1 2	260 T	33·72	173
» „ (Priory Row)	J. Gulson, Esq.	8	1 2	279 A	33·74	178
» „ (Middlesboro' Terrace).	Miss Merry	5	1 0	345 A	34·28	190
» „ (Stoke)	J. Gulson, Esq.	8	1 2	280	32·76	176
» „ (Walsgrave-on-Sowe) ..	J. S. Whittem, Esq. ...	8	1 0	296	31·53	148
» „ (Coundon)	Colonel Caldicott	5	1 0	350 T	36·32	173
» Bickenhill Vicarage	Rev. W. R. Capel	5	1 2	371 A	35·10	121
» Willey Rectory [Lutterworth] ..	B. P. M. Payler, Esq. ...	8	1 0	350 T	36·02	180
» Birmingham (Botanic Gardens) ..	Mr. Latham	5	5 2	...	30·14	168
† „ „ (Bloomsbury Street)	D. Smith, Esq.	8	0 8	340 T	34·54	155
† Oscott (St. Mary's College)	Rev. S. Whitty	5	0 6	461 T	29·79	170
» Nuneaton (Caldecote House) ...	Rev. Dr. Parker	5	1 0	...	34·35	191
» Atherstone	Baldwin Latham Esq. CE	5	1 0	298 A	30·44	153

DIVISION VII.—NORTH MIDLAND COUNTIES.

LEICESTER.

†Market Harboro' (Fairfield Rd.)	S. Watson Cox, Esq. ...	5	2 6	...	37·66	144
„ „ (Foxton Locks)	J. F. Bentley, Esq. ...	12	17 2	...	32·95	140
» Bruntingthorpe	Rev. F. H. Bridges ...	5	0 10	400	36·12	...
» Ashby Magna	Rev. E. Willes	5	1 6	438 B	35·05	160
†Arnesby Vicarage	Rev. W. P. Orton	8	1 2	400 P	32·80	136
» Kibworth Beauchamp	T. Macaulay, Esq.	5	2 6	355 T	37·17	...
» Kilby Vicarage	Rev. J. F. Halford ...	5	0 11	270	33·70	...
» Leicester (Town Museum)	Mr. J. Carryer	5	1 0	238 T	35·14	193
„ „ (Belmont Villas)	H. Billson, Esq.	8	1 3	240	34·97	...
» Thornton Reservoir	F. Griffith, Esq., C.E.	10	2 8	420 P	33·37	128
» Barkby	Rev. E. N. Pochin	5	0 1	212	35·17	161

DIVISION VII.—NORTH MIDLAND COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1880	Days on which of or more fell.
		Diameter	Height Above Ground	Height Above Sea Level		
			ft. in.	feet.	inches.	
LEICESTER—(con.)						
Thurcaston (Cropston)	F. Griffith, Esq., C.E..	8	1 0	...	35·34	176
Syston (Grove House)	J. Hames, Esq.	5	5 0	...	32·91	184
Melton Mowbray (Dalby Hall)...	Mr. G. Jones	8	2 6	480 B	33·42	172
Loughboro' (Nan Pantan Res.)..	G. Hodson, Esq., C.E..	8	0 9	287	32·74	162
Melton Mowbray (Thorpe Arnold)	Rev. J. S. Swift.....	8	2 3	320 ?	34·38	173
Loughborough (Cedar Cottage)...	J. Giles, Esq.	5	0 9	400 ?	33·17	...
" (Victoria Street) ..	W. Berridge, Esq.....	5	0 10	169 B	32·75	166
Melton Mowbray (Coston Rect.)	Rev. A. M. Rendell ...	5	1 0	300 ?	32·87	182
Waltham-le-Wolds	Mr. E. Ball	5	1 6	500 T	36·86	163
Harston [Grantham]	F. Beasley, Esq.....	...	1 3	...	37·27	155
Belvoir Castle	W. Ingram, Esq.	8	1 0	237 T	35·38	169
RUTLAND.						
Uppingham (West Deyne) ...	Rev. G. H. Mullins ...	8	1 6	485	33·01	192
" (Ayston)	Mr. Hull	5	1 1	...	35·66	...
Ketton Hall [Stamford]	F. Coventry, Esq.	5	1 0	130 B	34·45	172
Tolethorpe Hall [Stamford].....	C. O. Eaton, Esq.	8	1 0	95	34·38	171
Burley-on-the-Hill	Mr. W. Temple	8	1 0	...	34·87	165
Ryhall	Rev. C. Potchett	5	1 2	...	34·27	137
Oakham (Greetham)	Rev. C. A. Holmes ...	5	0 8	...	32·87	159
Market Overton	Miss H. E. G. Wingfield	8	0 11	...	35·25	214
LINCOLN.						
Stamford (Barn Hill Ho.).....	Dr. Newman	5	1 0	116 T	33·74	...
" (Northfields)	Mr. W. Hayes	5	1 0	160 T	34·41	135
*Bourne (Wytham-on-the-Hill)...	A. C. Johnson, Esq. ...	5	1 0	167 ?	31·24	141
Long Sutton (Tydd Gote).....	Mr. J. Tilson	5	4 0	...	30·03	162
Spalding (Pode Hole)	Mr. A. Harrison.....	12	0 3	20 T	37·12	...
†Grantham	J. W. Jeans, Esq.	8	0 6	179 T	32·10	...
" (Heydour Vicarage)...	Rev. G. F. Deedes.....	5	1 2	...	34·49	118
Boston (High Street).....	W.H. Wheeler, Esq. C.E	5	6 6	24 T	35·53	158
" (Grand Sluice)	J.E. Williams, Esq. C.E.	8	6 0	22	34·40	177
" (Churchyard).....	Mr. E. C. Hackford ...	5	3 0	22	34·28	151
Stubton [Newark]	G. Nevile, Esq.	5	4 6	...	33·47	169
Sleaford (Bloxholm)	Mr. D. Lumsden	5	1 0	20	32·59	130
Navenby	Rev. J. Hays ...	8	0 6	...	32·93	178
Spilsby	Dr. West Walker	5	1 0	...	33·45	179
Horncastle (Miningsby)	W.H. Wheeler, Esq. C.E	5	0 6	135 T	32·72	135
B Lincoln (Longhills)	A.S. Leslie Melville, Esq.	5	0 6	110 ?	31·96	168
" (Branstons Hall)	Mr. W. Wright	5	1 0	131 T	30·83	124
Spilsby (Partney)	Rev. T. Owston	5	1 0	...	35·16	188
Horncastle (Queen Street)	H. George, Esq., M.D..	5	1 0	100	34·01	...
†Lincoln (Boultham)	H. Teague, Esq.....	5	1 0	18 T	29·78	146
† " (St. Botolphs)	" "	5	1 3	25 T	30·88	...
D " (Doddington)	Rev. R. E. Cole	5	1 2	...	29·32	152
"	M. S. & L. R. Co.† ...	9	3 6	26	30·68	156

† Kept for the Canals Department of the Manchester, Sheffield, and Lincolnshire Railway Company.
Returns supplied by R. D. Heathcott, Esq.

DIVISION VII.—NORTH MIDLAND COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1880	Days on which ·01 or more fell.
		Diameter	Height above Ground.		Height above Sea Level	
			ft.	in.	feet.	inches.
LINCOLN—(con.)						
Lincoln (The Quarry)	R. Swan, Esq.	8	0	8	210	30·44
† „ (Carholme Villa)	J. Norton, Esq.	8	1	0	25	29·83
„ (Skellingthorpe Hall) ...	R. C. B. Coupland, Esq.	5	1	1	...	29·54
Gate Burton	M. S. & L. R. Co.	9	3	6	96	30·49
† Louth	T. W. Wallis, Esq. ...	5	6	0	111	35·04
† „ (Westgate)	Dr. F. Fawssett	5	0	9	110	35·61
„ (Calcethorpe)	B. Briggs, Esq.	5	1	0	380	38·45
† „ (Kelstern Grange)	D. G. Briggs, Esq.	8	0	11	390	37·22
† „ („ „) <i>monthly</i>	„ „ „ „	5	0	11	390	36·94
Market Rasen	M. S. & L. R. Co.	...	...	...	100	29·07
Gainsborough	„ „ „	9	...	...	76	27·24
Stockwith	„ „ „	9	3	6	21	31·96
Caistor	Rev. R. Thomas	5	0	9	...	30·70
Brigg	M. S. & L. R. Co.	9	3	6	16	28·61
„	A. Atkinson, Esq.	8	1	2	10	32·08
Grimsby (Aylesby)	S. McAulay, Esq.	5	2	0	...	31·92
„	M. S. & L. R. Co.	9	15	0	42	28·45
Barnetby	„ „ „	9	3	6	51	27·84
Crowle (Keadby)	„ „ „	9	...	...	10	24·71
Appleby	Rev. J. E. Cross	5	0	9	60	29·63
Ulceby (Killingholme)	Rev. J. Byron	5	1	4	60	32·99
Ferriby Sluice	Rev. J. E. Cross	5	0	9	10	30·82
New Holland	M. S. & L. R. Co.	9	3	6	18	28·03
NOTTS.						
Nottingham (Highfield House) ...	E. J. Lowe, Esq., F.R.S.	8	1	0	162	38·12
„ (The „ „ „) ...	„ „ „ „ „	...	25	0	...	36·54
„ (The Park)	M. O. Tarbotton, Esq., C.E.	8	1	0	183	35·45
„ („ „ „)	„ „ „ „ „	8	39	0	222	33·67
„ (Woodborough Road)	A. S. Rogers, Esq.	5	1	0	257	36·62
„ (Strelley Hall)	T. L. K. Edge, Esq.	5	1	0	392	35·83
„ (Gedling)	Hon & Rev. O. W. Forrester	5	3	0	130?	34·30
Eastwood Colliery	Mr. W. Weston	5	36	0	265	31·35
Southwell (Oxton)	H. Sherbrooke, Esq.	2	0	9	...	38·00
„	Miss Gaster	5	0	6	200	34·85
† Mansfield (Grove House)	W. Tyrer, Esq.	5	1	0	350	37·42
Ollerton (Whitemoor Ho.)	H. Horncastle, Esq. ...	5	0	9	175?	34·45
„ (Thoresby Gardens) ...	Mr. A. Henderson	8	3	0	175	35·02
Tuxford (Grammar School)	J. N. Dufty, Esq.	5	4	0	220	33·82
Workshop	M. S. & L. R. Co.	9	3	6	127	35·69
„ (Osberton)	Mr. S. A. Woods	5	3	7	...	40·48
Retford	M. S. & L. R. Co.	9	3	6	52	32·57
„ (Babworth)	Mr. J. Douglas	5	1	0	...	34·23
Workshop (Hodsock Priory)	H. Mellish, Esq.	8	1	0	56	34·94
„ („ „ „)	„ „ „ „ „	5	1	0	53	33·52
„ Hesley Hall [Tickhill]	B. J. Whitaker, Esq.	8	0	11	60	33·34

DIVISION VIII.—NORTH-WESTERN COUNTIES.

b Nantwich (Cholmondelly Castle)	Mr. J. Malcolm	8	1	0	42	41-02	163
Chester (Pulford Hall)	R. Massie, Esq.	5	3	0	60	35-13	187
b Congleton (Buglawton Vic.)	Rev. W. Besant	8	5	0	347	37-28	168
Macclesfield (Wincle)	W.H. Stubbs, Esq., C.E.	5	3	0	500	41-36	135
Bosley Reservoir	M. S. & L. R. Co.	9	3	6	590	35-92	178
„ Minns	„ „ „	9	3	6	1210	38-92	189
b† Chester (Lead Works)	A. O. Walker, Esq.	5	1	0	64	32 6½	164

DIVISION VIII.—NORTH-WESTERN COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which ".01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level	1880	
			ft. in.	feet.	inches.	
CESHIRE—(con.)						
Chester (Lead Works, Shot Tower)	A. O. Walker, Esq. ...	5	160 0	227 T	21·90	...
d† „ (Newton Nurseries).....	J. Dickson & Sons	8	0 8	62 A	34·40	169
Middlewich (Bostock Hall)	Col. France Hayhurst..	5	2 9	157 A	35·11	124
Macclesfield	M. S. & L. R. Co.	9	3 6	539 T	30·27	161
d „ (Park Green)	Mr. J. Dale	8	2 1	449 A	36·16	167
d Chelford (Astle Hall)	G. Dixon, Esq.	5	1 0	250 T	34·75	166
„ „ „	„ „ „	8	1 0	250 T	34·83	...
d Northwich („Highfield“)	L. B. Wells, Esq., C.E. .	8	3 4	118 A	35 34	182
„ „ (Winnington).....	H. Neumann, Esq.....	8	1 6	120 T	34·92	155
d*Neston (Hinderton)	Reginald Bushell, Esq. .	5	1 0	215 A	31·93	170
* „ „ monthly	„ „ „	8	1 0	215 A	32·20	...
d Frodsham (Foxhill)	J. Reynolds, Esq.	5	0 10	230 T	33·47	160
Bollington (Spond's Hill).....	M. S. & L. R. Co.	9	3 6	1279 T	37·23	...
†Whaley	„ „ „	9	3 6	602 T	44·20	193
Lyme Park	J.F.Bateman,Esq.FR.S. ...	...	...	680	49·39	...
d Runcorn (Weston Point)	L. B. Wells, Esq., C.E. .	4	2 4	18	40·21	133
d Lymm (Agden Hall)	D. R. Davies, Esq.....	5	1 0	190	34·95	155
Bowdon (Erlesdene)	J. Sidebotham, Esq. ...	8	0 6	211 A	33·85	...
„ „ (The Firs).....	R.Swindells, Esq., C.E. .	8	1 3	218 A	33·77	...
d Thelwall (Highfields)	T. G. Rylands, Esq. ...	5	1 0	118 A	32·44	177
„ „ „ monthly	„ „ „	5	1 0	118 A	32·57	...
d Lymm (Statham Lodge)	P. Stubs, Esq.	5	1 0	42 A	32·31	177
Altrincham (Barrington House).	J. Newton, Esq., C.E..	8	3 0	105 A	39·74	..
†Birkenhead (Bidstone Obs.)....	J. Hartnup, Jun., Esq. .	8	0 6	182 T	31·34	163
Marple Top Lock	M. S. & L. R. Co.	9	3 6	543 T	38·52	173
„ Aqueduct	„ „ „	9	3 6	321 T	38·66	183
Godley Reservoir	J.F.Bateman,Esq.FR.S. ...	...	...	500	37·09	...
Newton	M. S. & L. R. Co.	9	3 6	396 T	34·76	165
Mottram (Hill End)	„ „ „	9	3 6	680 T	41·08	171
„ „ (Matley's Field).....	„ „ „	9	3 6	399 T	44·61	189
Arnfield Reservoir.....	J.F.Bateman,Esq.FR.S. ...	...	...	575	46·98	...
†Rhodes Wood Reservoir	„ „ „	12	1 0	520	50·73	...
†Torrside Reservoir.....	„ „ „	12	1 6	600	52·90	...
Staleybridge (Swineshaw).....	„ „ „	8	3 0	884 A	44·31	...
†Woodhead Reservoir.....	„ „ „	12	0 10	680	56·97	...
LANCASHIRE.						
d Garston (Grassendale).....	J. Abraham, Esq.	5	1 0	50 T	34·95	170
d Kelton (Aigburth).....	J. Sing, Esq.	5	1 0	135 T	34·48	186
d Liverpool (St. Michael's Hamlet)	G. W. Jevons, Esq. ...	5	1 0	74 T	34·49	169
d Warrington (Arpley)	T. Longdin, Esq.	10	10 3	33 A	34·34	182
d „ (Bewsey Street) ..	L. W. Reynolds, Esq..	5	1 0	49 A	33·97	167
Liverpool (Grove Park)... ..	J. R. Darsie, Esq.....	3	6 0	160	33·20	151
d „ „ (Walton-on-the-Hill).	A. R. Andersson, Esq..	5	1 11	119 A	34·63	180
„ „ „	„ „ „	8	1 2	119 B	34·75	180
d Manchester (Withington).....	J. King, „Jun.,“ Esq. ...	5	1 0	110 T	34·65	170
d „ „ „	„ „ „	5	1 0	110 T	34·86	170
„ „ „ (Urmston)	T. Armstrong, Esq. ...	5	1 0	80 T	35·22	186

DIVISION VIII.—NORTH-WESTERN COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1880	Days on which '01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level		
			ft. in.	feet.	inches.	
LANCASHIRE—(con.)						
Denton Reservoir	J.F.Bateman, Esq. FRS.	...	...	324 T	36.82	...
Gorton	" " " "	...	...	263 T	35.39	...
d Manchester (Plymouth Grove)	J. F. Roberts, Esq.	5	3 9	150 A	36.00	184
d " (Ardwick)	J. Casartelli, Esq.	9	3 0	140 A	36.51	172
† " (Piccadilly)	M. S. & L. R. Co.	9	40 0	194 T	36.93	175
" (Fairfield)	" " " "	9	6 0	312 T	36.80	163
Eccles (Monton Green)	W. G. Birchley, Esq.	5	4 0	100 T	37.67	148
d Blundellsands (Park Corner)	T. M. Reade, Esq. C.E.	5	1 0	35 A	35.84	...
d Manchester (Newton Heath)	J. Warren, Esq.	5	1 0	288 T	39.34	193
Ashton (Waterhouses)	M. S. & L. R. Co.	9	3 6	345 T	45.20	184
Manchester (Prestwich Res.)	J.F.Bateman, Esq. FRS.	...	...	347 T	37.95	...
Oldham	" " " "	5	4 0	600 T	39.92	...
" (Brushes Clough)	" " " "	5	4 0	950 T	48.35	...
d Wigan (Beech Hill)	S. A. Oliver, Esq.	5	0 6	190 P	34.80	184
d " (Waterworks)	W. Bolton, Esq.	8	1 6	225 T	36.99	185
Bolton-le-Moors (The Folds)	H. H. Watson, Esq.	10	3 6	286 T	43.36	...
d " (The Freehold)	W. Musgrave, Esq.	9	6 6	352 A	45.05	184
" (Heaton)	R.H.Swindlehurst, Esq.	6	1 3	500	41.80	166
d " " " "	J. S. Holdsworth, Esq.	10	3 6	497 A	44.66	195
d " (Hurst Bank)	J. Watkins, Esq.	5	3 10	442 A	42.81	196
" (Moss Bank)	R. H. Ainsworth, Esq.	8	1 6	570 T	48.30	175
" (Smithill's Hall)	" " " "	8	1 5	515 T	48.42	199
d " (Belmont Road)	Rev. T. Mackereth	5	1 10	481 A	48.40	206
Milnrow (Piethorne)	J.F.Bateman, Esq. FRS.	5	4 0	800 T	36.21	...
d Rochdale (Drake Street)	T. H. Hayle, Esq.	5	3 7	473 A	37.96	183
d Ormskirk (Rufford)	J. Porter, Esq.	5	0 8	38 T	35.14	191
Bolton (Belmont)	R.H.Swindlehurst, Esq.	6	0 9	800	58.20	193
Rochdale (Nayden Dane)	J. Diggle, Esq.	5	1 6	900 T	44.96	...
Southport (Liverpool Road)	J. Baxendell, Esq.	5	2 8	23 A	31.46	164
Entwistle	R.H.Swindlehurst, Esq.	7	1 0	700	53.50	182
Rochdale (Littleborough)	C. R. Dykes, Esq.	10	1 6	600	40.00	...
Blackstone Edge	" " " "	10	1 9	1225	53.50	...
" " (Canal Summit)	" " " "	10	1 11	700	43.30	...
" " (Chilbourn)	" " " "	10	1 3	800	46.20	...
" " (Lenches)	" " " "	10	1 9	900	40.50	...
d Chorley (Whittle-le-Woods)	Theodore Hare, Esq.	5	2 6	265 T	36.73	165
Haslingden (Holden Wood)	T. Rigby, Esq.	8	1 0	670	52.64	145
Chorley (Withnell Hall)	J. Shackleton, Esq.	5	0 6	545	44.86	...
d Over Darwen (St. James's Vic.)	Rev. W. H. Blamire ...	5	1 0	564 A	46.65	189
" " (Daisy Green)	W. B. Bryan, Esq., C.E.	8	1 0	969 A	44.09	161
" " (Pickup Bank)	" " " "	8	1 0	720 A	44.97	...
Bacup (Calf Hey)	T. Rigby, Esq.	...	...	800	46.10	...
Blackburn (Guide Reservoir)	W. B. Bryan, Esq. C.E.	8	1 6	650	40.29	143
Oswaldtwistle	R. Hall, Esq.	10	0 6	635	51.30	187
Blackburn (Pleasington)	W. B. Bryan, Esq. C.E.	8	3 0	232 A	38.44	...
" (Witton)	" " " "	8	2 0	315 A	41.57	183
d " (Water Works Office)	" " " "	8	40 0	400 T	38.73	...
" (Pumping Station) ...	" " " "	8	2 0	600 A	42.06	161

DIVISION VIII.—NORTH-WESTERN COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1880	Days on which "01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level		
			ft. in.	feet.	inches.	
LANCASHIRE—(con.)						
Blackburn (Preston New Road) ..	W. B. Bryan, Esq., C.E.	8	4 0	515 π	45.34	201
Accrington (Warmden Reservoir)	R. Crossley, Esq.	8	1 9	650 π	41.13	...
Bacup (Holmes)	F. Aitken, Esq.	5	3 0	880 π	53.57	215
Preston (Corporation Offices) ...	H. Reah, Esq.	8	16 0	120	36.36	173
Rawtenstall (Clough Bridge Res.)	F. Rigby, Esq.	8	1 0	900 π	52.65	211
Huncoat (Burnley Road Res.) ...	C. Harrison, Esq.	9	1 6	620 π	40.00	...
Burnley (Rosegrove Cemetery) ...	W. B. Bryan, Esq., C.E.	8	1 0	493 π	42.41	184
" (Yorkshire Street)	J. Emmett, Esq.	8	20 0	420 π	40.58	...
" (Palace House)	W. B. Bryan, Esq., C.E.	8	5 0	450 π	38.21	187
" (Simonstone)	" " "	5	1 0	366 π	41.01	190
" (Monkholme)	" " "	8	1 0	402 π	52.26	...
" (Swindon)	J. Emmett, Esq.	8	18 0	750 π	36.37	...
" (Gawthorpe Hall)	Sir U. K. Shuttleworth Bt	8	1 0	316 π	41.26	157
" (Briercliffe Vicarage) ...	Rev. R. D. H. Gray ...	5	1 0	680	46.92	215
Alston	H. Reah, Esq.	8	1 2	320 π	41.14	...
Blackpool (South Shore)	G. Sharples, Esq.	10	1 8	29	34.72	...
" (Arnold House)	F. Ward, Esq.	5	1 0	32 π	32.99	175
" Kirkham (Weeton)	F. Duncanson, Esq. ...	10	1 0	95 π	36.09	...
" Eccleston (Elswick Lodge)	S. King, Esq.	10	1 4	55 π	33.08	186
" Stonyhurst College	Rev. S. J. Perry, F.R.S.	11	1 0	376 π	50.26	189
" "	" " "	11	2 0	377 π	49.79	190
" "	" " "	11	1 0	376 π	50.66	...
" Knowl Green	H. Reah, Esq.	8	1 2	400 π	42.14	...
" Loud-scales	" " "	8	1 2	400 π	42.97	...
" Spade Mill	" " "	8	1 2	400 π	40.03	...
" Jeffrey Hill	" " "	8	1 2	900 π	47.52	...
" St. Michael's-on-Wyre	Rev. P. J. Hornby	5	0 10	26 π	34.58	185
" Garstang (Calder Mount)	C. Wilson, Esq.	5	10 0	100 π	46.03	196
" Clitheroe (Downham Hall)	R. Assheton, Esq.	10	1 6	464 π	45.89	...
" Garstang (Vale House)	J. Jackson, Jun., Esq..	6	4 3	455 π	43.38	189
" (Winmarleigh Vic.)	Rev. T. B. Armitstead..	5	1 0	53 π	32.93	...
" (Barnacre Reservoir) ...	T. Duncanson, Esq. ...	10	1 0	617 π	45.36	...
" (Grizedale)	" " "	10	1 3	519 π	44.56	...
" Lancaster (South Road)	W. Roper, Esq.	12	3 6	114 π	38.87	162
" (Escowbeck, Caton) ...	J. Greg, Esq.	12	2 0	150 π	39.00	...
" (Halton Park)	A. Greg, Esq.	8	1 6	240 π	36.50	120
" (Hest Bank)	F. Ransome, Esq.	5	2 2	58 π	35.04	174
" (Wray)	Rev. C. L. Reynolds ...	5	1 1	165 π	43.66	186
" Melling (Hornby Castle)	W. P. Blacow, Esq. ...	8	2 3	100 π	42.62	197
" Barrow-in-Furness	W. Fergusson, Esq. ...	11	1 6	30 π	32.28	159
" (Cavendish Park)	W. S. Whitworth, Esq.	8	1 0	60 π	30.65	176
" Arkholme (Storr's Hall)	F. F. Pearson, Esq. ...	5	1 0	220 π	39.72	...
" Cartmel (Flookburgh)	F. R. Croasdale, Esq..	5	2 7	70 π	40.27	125
" (Holker)	Mr. W. Fox	8	4 8	155 π	39.47	186
" Grange (Nutwood)	Rev. E. Massie	5	2 6	100	39.80	201
" Ulverston (Powka Beck)	Mr. W. Fergusson	11	1 6	500 π	42.58	173
" Cartmel (Pit Farm)	Mr. W. R. Nash	5	1 0	122 π	43.64	183
" (Broughton Hall)	Col. Ainsworth, M.P....	5	2 8	210 π	42.24	179

DIVISION VIII.—NORTH-WESTERN COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which ".01 or more fell.	
		Diameter	Height Above Ground	Height Above Sea Level	1880		
			ft.	in.	feet.		inches.
LANCASHIRE—(con.)							
D Ulverston (Colton)	Rev. A. Christopherson	5	1	0	226 T	46.15	162
D Broughton-in-Furness	Rev. F. A. Malleon ...	5	1	3	40 T	46.21	136
Coniston (Torver Rectory)	Rev. T. Ellwood	5	0	6	400 T	65.35	
† Monk Coniston Park	V. Marshall, Esq.	10	4	11	150 T	63.50	
D " " " "	" " " " " "	5	1	0	305	73.03	195
Hawkshead	W. Lane, Esq.	5	1	2	280 T	58.89	180
D BridgeEnd [LittleLangdale] (49)	E. B. W. Balme, Esq..	8	0	9	385	95.18	185
Brathay Hall [Ambleside]	G. Redmayne, Esq. ...	5	1	6	140	69.78	200

DIVISION IX.—YORKSHIRE.

WEST RIDING.

Sheffield (Brincliffe Rise)	A. Chadburn, Esq.	5	1 0	500 T	44.30	179
" (Edge)	M. S. & L. R. Co.	9	3 6	336 T	43.75	177
† " (Redmires)	J. Gunson, Esq.	10	5 0	1100 T	51.43	204
" " " " " "	" " " " " "	8	4 0	1100 T	52.72	...
D " (Broomhall Park)	D. Doncaster, Jun. Esq.	10	2 0	330 T	38.42	178
" (Rivelin)	J. Gunson, Esq.	10	4 0	564 T	47.12	198
" " " " " "	" " " " " "	8	4 0	564 T	47.79	..
" (Crookes)	" " " " " "	10	2 0	629 T	40.15	186
" " " " " "	" " " " " "	8	2 0	629 T	40.36	...
† Rotherham (Ulley Reservoir) ..	Mr. L. Berry	5	1 0	184 T	32.48	130
Sheffield (New Shoreham Street).	The Meteor. Council	5	10 0	269	34.99	175
† " Station	M. S. & L. R. Co.	9	3 6	188 T	33.77	149
" (Tinsley Locks)	" " " " " "	9	...	143 T	35.10	155
D Tickhill (Sandbeck Park)	The Earl of Scarborough	5	1 0	150 T	34.87	170
† Rotherham (Moorgate Grove) ..	R. Chrimes, Esq.	5	1 0	262 T	36.13	163
" (Thrybergh)	B.S. Brundell, Esq., C.E.	8	1 0	184 T	35.77	132
Doncaster (Firsby)	" " " " " "	8	1 0	189 T	37.79	130
Elsecar	M. S. & L. R. Co.	9	...	175 T	36.23	139
D Wath-upon-Deane (Chapel St).	W. M. Burman, Esq.	8	1 0	185 T	42.46	177
" (West Melton)	Rev. J. Boyd	6	0 10	172 T	39.13	150
D " " " " " "	J. N. Baxter, Esq.	5	1 0	100 T	41.60	167
Worsborough	M. S. & L. R. Co.	9	...	225 T	36.92	153
D Stainborough (Wentworth Castle)	Mr. W. Fisher	8	2 6	520 T	38.66	161
Doncaster	M. S. & L. R. Co.	9	...	35 T	27.58	148
D " (Magdalens)	Mr. J. Howorth	5	4 6	46 T	32.59	133
† Dunford Bridge Station	M. S. & L. R. Co.	9	3 6	954 T	52.71	190
D† " " (Reservoir)	Mr. G. Whittfield	12	2 0	1100 T	59.92	223
D† " " " " " "	" " " " " "	8	2 1	1100 T	62.73	223
† Penistone (Carlcoates)	M. S. & L. R. Co.	9	3 6	1075 T	52.93	195
† " " " " " "	" " " " " "	9	3 6	717 T	44.04	164
" (Hazlehead)	" " " " " "	9	...	868 T	54.90	169
" (Ingbirchworth Res.)	W. Greenwood, Esq.	8	1 4	853 T	49.00	211
Holmbridge (Batley W. W.) ..	J.F. Bateman, Esq. FRS	...	...	917 T	62.90	...

DIVISION IX.—YORKSHIRE—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which ≥ 0.1 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level	1880	
			ft. in.	feet.	inches.	
WEST RIDING—(con.)						
Barnsley	W. Greenwood, Esq.	8	15 4	352 T	36 00	161
„ (Church Street)	Dr. Sadler	5	4 3	350 T	38 63	173
„	M. S. & L. R. Co.	9	...	175 T	38 15	131
Saddleworth Station	E. B. Smith, Esq.	9	4 0	610 T	49 39	...
Strinesdale [Oldham]	J. F. Bateman, Esq. FRS	5	4 0	800 T	38 74	...
† Meltham (Harden Moss)	J. B. Abbey, Esq., C.E.	8	1 2	1200 T	56 42	...
† Marsden (Standedge)	E. B. Smith, Esq.	9	2 6	1100 T	57 25	...
Denshaw	J. F. Bateman, Esq. FRS	5	4 0	1050 T	46 33	...
† Meltham Grange	J. B. Abbey, Esq., C.E.	8	1 2	925 T	49 71	...
Doncaster (Kirk Bramwith)	B. S. Brundell, Esq. C.E.	5	1 0	17 T	31 32	119
„ Slaithwaite (Blackmoorfoot)	J. Stanway, Esq.	8	1 0	800 T	45 85	209
„ Huddersfield (Dalton) <i>new gauge</i>	J. W. Robson, Esq.	8	1 0	350 T	38 92	187
Longwood (Bilberry Edge)	J. B. Abbey, Esq., C.E.	8	1 2	1100 T	42 14	...
„ Ackworth School	W. B. Fletcher, Esq.	5	1 6	...	36 19	177
„ Mirfield (Cote Wall)	E. B. W. Balme, Esq. ..	8	0 9	200	35 73	167
„ Wakefield Prison	Dr. H. Clarke	8	1 0	96 T	37 22	164
„ (Alverthorpe Hall)	H. Clarkson, Esq.	5	1 0	150 T	34 01	171
„ Rastrick	A. Clay, Esq.	5	1 3	410 T	31 05	171
„ Wakefield (Stanley Vicarage)	Rev. R. Burrell	5	1 0	100 T	33 40	162
Goole (Tillage Works)	Mr. J. Harrison	5	1 3	19	32 17	145
„ Todmorden (Stansfield Hall)	T. Fielden, Esq.	8	1 9	582	54 31	209
„ Halifax (Bermerside Observatory)	J. Gledhill, Esq.	8	0 6	500	41 98	183
„ (Thorpe)	F. G. S. Rawson, Esq. ..	8	0 8	360 T	48 77	176
„ (Victoria Albert)	J. A. Paskin, Esq., C.E.	5	1 0	795 T	42 50	...
„ (Gibbett)	„ „ „	5	5 0	568 T	40 75	...
„ (Ramsden Wood)	„ „ „	8	1 2	816 T	45 41	...
Methley Park	J. Richardson, Esq., C.E.	5	0 9	98 T	36 42	155
Leeds (Leventhorpe Hall)	J. T. Leather, Esq., C.E.	10	4 0	91 T	30 29	...
Halifax (Castle Carr)	J. A. Paskin, Esq., C.E.	...	...	1100 T	47 76	...
„ (Midgley Moor)	„ „ „	7	0 6	1350 T	55 25	...
„ (Warley Moor)	„ „ „	7	0 6	1425 T	53 98	...
„ (Ogden)	„ „ „	8	1 3	990 T	49 68	...
„ (Ovenden)	„ „ „	...	...	1375	52 12	...
„ (Widdop)	„ „ „	...	...	1050	53 80	...
„ (Walshaw Dean)	„ „ „	8	0 3	1380 T	51 76	...
„ South Milford Rectory	Rev. F. J. Young	5	1 4	60 T	34 07	184
Bradford (Queensbury)	W. Foster, Esq.	8	2 2	1050 T	48 10	147
„ (Brayshaw Reservoir)	A. R. Binnie, Esq., C.E.	5	1 0	982 T	37 60	184
„ (Town Hall)	J. McLandsborough, Esq.	8	1 0	326 T	39 91	...
„ (The Exchange)	„ „ „	8	65 6	395 T	35 70	...
„ (Midland Station)	„ „ „	8	0 10	319 T	39 32	...
„ (Farcliffe)	E. Milnes, Esq.	5	0 0	575 T	39 96	182
„ (Thornton Moor)	A. R. Binnie, Esq., C.E.	5	1 0	1401 T	42 37	...
„ („ „ Res.)	„ „ „	5	1 0	1176 T	46 70	223
„ (Stubden) <i>old gauge</i>	„ „ „	8	1 0	1075 T	48 39	223
„ (Brown Royd Res.)	„ „ „	5	1 0	385 T	35 27	177

The figures in this type 26 refer to the Map facing page 50 of *British Rainfall*, 1876.

DIVISION IX.—YORKSHIRE—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1880	Days on which ·01 or more fell.	
		Diameter	Height above Ground.				Height above Sea Level
			ft.	in.	feet.		inches.
WEST RIDING—(con.)							
Bradford (Nan's Scar) 11	A. R. Binnie, Esq., C.E.	5	1	0	1101 T	46·56	...
„ (Doe Park) <i>old gauge</i> 7	„ „ „	8	1	0	810 T	44·80	212
„ („ „) 7	„ „ „	5	1	0	811 T	42·50	212
„ (Top of Stairs) 14	„ „ „	5	1	0	1401 T	54·14	...
„ (Leeming Reservoir) 12	„ „ „	5	1	0	850 T	33·40	...
„ (Leeshaw Reservoir) 13	„ „ „	5	1	0	875 T	47·50	...
„ (Chellow Dean) 4	„ „ „	5	1	0	645 T	37·43	189
„ (Hewenden Reservoir) 6	„ „ „	5	1	0	701 T	37·62	183
„ („ „) <i>old g.</i> 6	„ „ „	5	1	0	700 T	40·92	183
„ (Heaton Res.) <i>old gauge</i> 5	„ „ „	8	1	0	530 T	36·00	145
† Leeds (Holbeck)	Messrs. Marshall & Co.	10	32	0	127 T	30·89	159
„ „ („)	„ „ „	5	1	8	95 T	32·39	159
„ „ („ W. Works Depot)	E. Filliter, Esq., C.E.	8	0	9	93 T	32·78	158
„ (Woodhouse Moor)	„ „ „	8	0	9	307 T	32·03	154
„ (Elmete Hall, Roundhay)	J. Kitson, Esq.	5	1	6	400 T	36·23	184
„ (Weetwood Reservoir) ...	E. Filliter, Esq., C.E.	8	0	9	328 T	32·94	171
„ „ („ Hall)	H. C. Marshall, Esq.	5	0	7	400 T	34·11	186
„ Shipley (Moor Head)	G. Knowles, Esq.	8	10	0	450	28·85	..
„ Leeds (Allerton Hill)	T. Fenwick, Esq., C.E.	5	0	7	418 T	35·51	174
„ „ (Oliver Hill, Horsforth) ...	C. France, Esq.	3	0	9	250 T	35·58	169
„ „ (Crag Hill, Horsforth) 36	J. Fox, Esq., C.E.	5	1	0	350 T	36·56	201
„ Bingley (The Grange)	J. McKie, Esq.	5	0	11	430 T	37·54	198
† Shipley (Eldwick)	E. Filliter, Esq., C.E.	8	0	9	848 T	34·80	140
„ Leeds (Eccup)	„ „ „	8	0	9	343 T	34·68	173
† Bingley (Sunnydale)	Mr. Ambler	5	1	0	980 T	37·30	...
„ Skipton (Rye Croft, Crosshills) 42	G. Parkinson, Esq.	8	1	0	405 T	41·25	152
„ Harewood (Arthington)	E. Filliter, Esq., C.E.	8	0	9	139 T	34·59	176
„ Skipton (Gill Grange, Silsden) 15	A. R. Binnie, Esq., C.E.	5	1	0	883 T	33·68	...
„ † Ilkley (West Parade) 37	Mr. J. Hainsworth	5	8	9	278 T	39·95	154
„ Skipton (Silsden Reservoir) ... 16	A. R. Binnie, Esq., C.E.	5	1	0	560 T	31·32	154
„ Thornton-in-Craven	T. Wilson, Esq.	5	5	4	456 T	37·77	211
„ Slaidburn (Hareden Brook)	H. Reah, Esq., C.E.	8	1	2	540	67·34	...
„ „ (Langden Brook)	„ „ „	8	1	2	556	66·52	...
„ „ (Whiteholme)	Mrs. Birchall	5	1	3	475 T	48·83	142
„ Skipton (Cringle's Reservoir) 17	A. R. Binnie, Esq., C.E.	5	1	0	760 T	32·11	155
„ „ (Counter Hill) 18	„ „ „	5	1	0	951 T	33·33	...
„ „ (Chelker Reservoir) ... 19	„ „ „	5	1	0	730 T	34·30	...
„ Slaidburn (Dunsop Houses)	W. B. Bryan, Esq., C.E.	8	1	6	450 T	58·18	168
„ „ (Middle Knoll)	„ „ „	8	2	6	1298 T	49·70	...
„ „ (Brennand)	„ „ „	8	1	6	820 T	57·44	169
„ „ (Whitendale)	„ „ „	8	1	6	830 T	65·30	174
„ „ (Cabin Hill)	„ „ „	8	2	6	1559 T	63·50	...
„ „ (Baxton Fell)	„ „ „	8	2	6	1540 T	49·60	...
„ York (Copmanthorpe Vicarage) ..	Rev. E. Healy	...	...	...	...	30·93	...
„ „ (Phil. Soc. Gardens)	The Meteor. Council	8	1	9	53 T	30·93	179
„ „ (Park Street, The Mount) ..	J. Burtt, Esq.	5	1	0	45 T	28·54	...
„ † „ (Cherry Hill)	H. Richardson, Esq.	5	1	6	60 T	30·36	...
„ Wetherby (Ribston)	Mr. Jones	5	1	2	130 T	29·68	...

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which 10 or more fell
		Diameter	Height Above Ground	Height Above Sea Level	1880	
			ft. in.	feet.	inches.	
WEST RIDING—(con.)						
Harrogate Cemetery	J. Coupland, Esq.	8	1 0	380	41·71	149
Skipton (Barden Res.) <i>old g.</i> 20	A. R. Binnie, Esq., C.E.	8	1 2	746 π	51·01	227
" " " " 20	" " " "	5	1 0	746 π	47·80	228
Otterburn-in-Craven.....	W. Gomersall, Esq. ...	5	1 0	510 π	44·65	150
Skipton (Upper Res., Barden) 21	A. R. Binnie, Esq., C.E.	5	1 0	1250 π	46·22	212
Pateley Bdg (Grimwith Res) <i>old g.</i> 24	" " " "	8	1 0	890 π	49·97	214
" " " " 24	" " " "	5	1 0	893 π	50·37	214
" " (Castle Stead)..... 39	Mr. A. C. Young	5	1 0	410 π	47·37	196
Boroughbridge (Aldborough) ...	Rev. R. W. Marriott...	5	2 6	70 $\uparrow$	32·09	133
Malham Tarn	Mr. Coulthard	5	1 0	1296 π	58·26	230
Ripon (North Lodge).....	F. D. Wise, Esq.	5	1 0	120	32·32	...
" (Borage House)	Rev. S. Joy	8	1 6	...	33·74	...
Arneliffe	Rev. Canon Boyd	8	1 6	750 $\uparrow$	65·05	228
" (Halton Gill)	Mr. S. Clarke	5	4 6	1050	60·23	...
Ripon (High Bank, Mickley) ...	Miss Harrison	5	1 0	225 $\uparrow$	36·92	150
Wharfedale (Oughtershaw Hall).	C. H. L. Woodd, Esq..	8	1 4	1350 $\uparrow$	64·60	...
Langstrothdale (Cam Fell)	" " " "	4	1 0	2000	64·58	...
Sedbergh (Brig Flatts).....	J. Handley, Esq.	5	1 0	300 $\uparrow$	48·90	204
" (Long Lane)	J. Dockeray, Esq.	5	4 4	420	59·03	220
" (Thorne Hall)	Miss Elam	5	1 6	400 $\uparrow$	48·49	202
EAST RIDING.						
Patrington (Spurn Head)	The Meteor. Council ...	8	1 0	27	24·23	173
" "	W. B. Pugh, Esq.	5	0 3	10 π	30·76	195
Hull (Beverley Road)	H. Smith, Esq.	8	4 8	12 $\uparrow$	31·94	172
" (Derringham)	W. Lawton, Esq.	5	2 2	10 π	30·49	174
" (People's Park).....	Mr. E. Peak	5	0 6	6	33·81	181
Brough (Brantinghamthorpe) ...	Mr. R. C. Kingston ...	5	2 0	200 $\uparrow$	37·68	...
Cottingham	J. N. Hill, Esq.	8	1 3	26 $\uparrow$	28·21	188
Beverley (Alexandra Terrace) ...	T. Dyson, Esq.	12	8 0	62 π	28·42	153
Middleton-in-the-Wolds	Rev. H. D. Blanchard..	5	1 0	150 $\uparrow$	33·79	148
Pocklington (Warter)	J. Coxon, Esq.	5	1 10	230 $\uparrow$	32·82	166
Thixendale	Rev. W. H. Fox	10	0 9	425 $\uparrow$	38·38	195
Lowthorpe (The Elms)	H. Onslow Piercy, Esq.	5	1 0	63 π	33·78	178
Hunmanby (Foxholes Rectory)..	Rev. R. H. Foord	5	1 0	234 $\uparrow$	41·42	197
" (Wold Newton Vic.)	Rev. T. S. Ackland ...	5	1 6	195 $\uparrow$	47·89	168
Ganton Hall [Scarborough]	Mr. J. Shields	5	1 0	200 $\uparrow$	36·02	175
NORTH RIDING.						
Malton	H. Hurtle, Esq.	10	1 0	75 $\uparrow$	30·50	...
Bishopdale (Kidstones)	Rev. F. W. Stow	3	1 0	990 $\uparrow$	57·75	...
Thirsk (Sowerby)	C. M. Swarbreck, Esq.	5	1 0	105	30·49	136
" " " "	A. C. Bamlett, Esq. ...	5	1 0	118	32·38	156
" " " "	" " " "	5	1 0	...	35·84	...
Bedale (Thorpe Perrow)	Mr. W. Culverwell ...	5	1 6	170	32·10	151
Bishopdale (The Rookery)	Mr. J. Loving.....	5	1 0	605	55·91	224
Aysgarth (Nell Bank, Walden)..	Rev. F. W. Stow	3	1 0	1100 $\uparrow$	49·52	...
Hawes Junction.....	The Meteor. Council ...	8	1 0	1115	55·10	209

DIVISION IX.—YORKSHIRE—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which 1/2 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level	1880	
NORTH RIDING—(con.)						
d Aysgarth Vicarage.....	Rev. F. W. Stow	5	1 0	659 $\nearrow$	38.90	194
" " 	" " 	8	1 0	644	40.21	...
" " 	" " 	12	3 0	644	39.03	...
Leyburn (Wensley)	G. W. Wray, Esq.....	7	1 0	660 $\uparrow$	40.06	...
d " " 	Mr. H. Pearson	6	2 6	...	43.27	125
Scarborough (Osgodby).....	E. Filliter, Esq., C.E..	8	0 9	159 $\uparrow$	31.49	138
" " 	F. Shaw, Esq.	8	1 0	130	32.55	191
Hambleton Hills (High Paradise)	A. C. Bamlett, Esq.	5	1 0	1050	37.53	161
Helmsley (Nawton)	E. Filliter, Esq., C.E..	5	0 9	262 $\uparrow$	34.56	109
d†Hawes (Hardrow Vicarage)	Rev. R. Pink	5	1 0	790 $\nearrow$	53.88	210
d " (Lunds)	" " 	5	1 0	1100 $\uparrow$	61.45	223
Swaledale (Summer Lodge) ...	Mr. Broderick.....	5	1 0	1041 $\uparrow$	56.17	172
*Northallerton	Dr. Hodgson	5	1 3	133 $\nearrow$	30.59	...
Catterick (Tunstall)	H. C. Marshall, Esq....	5	1 0	350	29.74	...
Fylingdales Moor (Harw'dale Mill)	E. Filliter, Esq., C.E..	8	0 9	275 $\uparrow$	38.67	138
Richmond (The Grove)	G. Roper, Esq.	5	1 3	...	38.05	126
Northallerton (Rounton)	I. L. Bell, Esq., F.R.S.	8	0 7	200	32.66	...
Reeth (Eskeleth House)	W. Whitwell, Esq.	8	1 0	947 $\uparrow$	52.07	147
East Layton [Darlington]	Mrs. Maynard	5	1 0	575 $\uparrow$	29.96	...
d Richmond (Forcett Park)	J. Michell, Esq.	5	1 0	360 $\uparrow$	33.76	189
d Whitby (Guisborough Road) ...	M. Simpson, Esq.	5	2 0	184 $\nearrow$	30.59	176
Saltburn (Port Mulgrave)	J. Hodgson, Esq.	5	4 6	350 $\uparrow$	28.74	149
Guisborough (Hutton Hall)	J. W. Pease, Esq., M.P.	5	1 6	400 $\uparrow$	40.22	165
d " (Lockwood Beck Res.)	W. P. Anson, Esq., C.E.	8	1 0	632 $\nearrow$	42.55	207
d Lofthouse (Grinkle Park).....	Mr. G. Abbey.....	5	1 0	540 $\nearrow$	39.56	129
†Mile Rigg [Brough]	G. J. Symons, Esq. F.R.S	8	1 0	1400 $\uparrow$	44.05	...
†Lune Head [Brough].....	" " 	8	1 0	1779 $\uparrow$	48.80	...
d Middlesboro' (Southfield Villas)	W. Fallows, Esq.	6	1 6	21 $\uparrow$	28.38	144
d Guisborough (Skelton Reservoir)	W. P. Anson, Esq., C.E.	8	1 0	325 $\nearrow$	31.25	183
d†Mickleton [Middleton]	G. J. Symons, Esq. F.R.S	8	1 0	775 $\uparrow$	37.40	168
" (Lime Kiln Pasture) ..	" " 	8	1 0	...	42.50	...

DIVISION X.—NORTHERN COUNTIES.

DURHAM.

Darlington (Dinsdale Rectory)...	Rev. J. W. Smith	5	2 0	54 $\uparrow$	34.76	162
d† Eaglescliffe [Yarm]	Rev. Canon Hull	5	1 0	80 $\nearrow$	28.78	146
d Darlington (South End)	Mr. N. Black	8	0 10	140	30.92	185
„ (Flora Gardens)	Mr. W. Wrather	8	2 0	147 $\uparrow$	28.20	145
d „ (Cleveland Parade) ..	S. Hare, Esq.	5	1 0	160 $\uparrow$	31.02	183
d „ (Brinkburn)	Mr. H. Ward	8	1 6	165 $\uparrow$	31.57	130
† Staindrop (Raby Castle)	Mr. R. Westcott	8	1 0	460 $\uparrow$	33.03	...
d Darlington (Heighington)	Rev. C. C. Chevallier ..	5	4 0	460 $\uparrow$	32.33	155
d Hartlepool (Heugh Lighthouse) ..	W. Belk, Esq., C.E.	5	0 6	34 $\nearrow$	35.57	234
d „ (Hurworth Burn) ...	T. Fenwick, Esq., C.E. ...	5	0 7	360	29.40	119
d „ (Hart Reservoir)	„ „ „	8	0 9	164	27.23	114

Numbers printed thus [1] refer to the Map facing page 52 of *British Rainfall*, 1876.

DIVISION X.—NORTHERN COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1880	Days on which "01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level		
			ft. in.	feet.	inches.	
DURHAM—(con.)						
† Wolsingham [23]	Mr. A. Mitchell	5	1 0	464 π	40·77	180
D Durham Observatory	G. A. Goldney, Esq. ...	12	4 8	340 π	29·52	163
D " "	" " " "	8	4 3	340 π	29·87	163
D " (Ushaw College)	Rev. J. Corbishley	5	0 10	600	35·03	178
Seaham (Vicarage)	Rev. A. Bethune	5	0 4	80 $\uparrow$	29 34	103
D " (Hall)	Mr. R. Draper	5	1 0	100 π	30·63	100
D Chester-le-Street (Birtley)	R. C. Clephan, Esq. ...	5	1 0	205 π	30·00	196
Sunderland (W. Hendon House)	T. W. Backhouse, Esq. ...	5	1 0	132 π	29·01	...
" " " "	" " " "	5	1 0	132 π	29·58	...
" (Claremont Terrace)	H. J. Yeld, Esq., M.D. ...	8	1 4	100 $\uparrow$	26·86	152
" (The Limes)	J. W. Mounsey, Esq. ...	5	0 6	120	25·71	...
D Gateshead (Eighton Cottage) ...	T. M. Favell, Esq., C.E. ...	5	0 10	515 $\uparrow$	30·54	155
NORTHUMBERLAND.						
† Allenheads [22]	Mr. J. Charlton	8	0 4	1353 π	38·95	...
D Shotley Hall	Mr. J. Coulson	5	0 5	315 $\uparrow$	39·69	135
D Haltwhistle (Shaft Hill)	Mr. R. Hetherington ...	5	8 0	626	40·62	130
D Bywell	Mr. W. J. Tone	8	0 6	87 $\uparrow$	29·24	130
D Haltwhistle (Unthank Hall) ...	Rev. Dixon Brown	5	0 9	380 $\uparrow$	38·09	192
D Corbridge-on-Tyne (Lauder Gnge)	T. G. Hurst, Esq.	5	0 8	275	30·28	155
Newcastle (Philos. Society)	W. Lyall, Esq.	8	1 7	105 $\uparrow$	27·39	...
" (Portland Road)	Mr. T. Bone	...	...	...	29·83	152
D " (Rye Hill)	Robert Foster, Esq. ...	8	1 2	220 $\uparrow$	27·75	142
" (Gladstone Terrace) ..	W. Smurthwaite, Esq. ...	2	6 0	150 $\uparrow$	30·36	165
D " (Town Moor)	Mr. W. Neill	5	0 6	201 π	29·18	171
D Haydon Bridge	T. J. Bewick, Esq., C.E. ...	8	1 0	291 π	34·62	193
North Shields (Wallsend)	J. W. Dees, Esq.	10	0 6	100 $\uparrow$	29·03	...
" (Post Office)	The Meteor. Council ...	8	1 4	100	24·59	184
† " (Rosella Place) ...	R. Spence, Esq.	8	1 6	124 π	28·18	183
" (Low Lights)	J. R. Procter, Esq. ...	8	3 4	22 π	28·26	160
D " (Tynemouth)	P. J. Messent, Esq., C.E. ...	5	2 8	65 π	25·34	187
" (Clementhorpe) ...	J. R. Procter, Esq. ...	5	1 0	150 π	28·08	168
" (Billy Mill Res.) ..	T. M. Favell, Esq., C.E. ...	5	0 10	197 π	29·12	...
D " (Whitley Convaless. Ho.) ..	C. Roope, Esq.	5	0 6	38	26·29	121
Humshaugh	Rev. H. Taylor	8	1 6	286 $\uparrow$	28 74	...
Stamfordham	Rev. J. F. Bigge	5	1 0	400 $\uparrow$	31·49	...
Bingfield House	J. Coppin, Esq.	5	1 0	445 $\uparrow$	31·55	...
Whittle Dean	D. D. Main, Esq.	10	...	...	29·21	...
Newcastle and Gateshead W. Works	{ Swinburn (Woodford)	10	0 6	500 π	29·37	...
	{ North Tyne (Green Crag) ...	10	0 6	800 π	30·06	...
	{ " " (Valley)	10	0 6	300	29·64	...
	{ Hallington	10	0 6	469 π	31·89	...
	{ " (Fawcett)	10	0 6	563 π	29·26	...
	{ Gunnerton Burn (Camphill) ..	10	0 6	676 π	28·68	...
D Bellingham (Hesleyside)	W. O. Charlton, Esq. ...	5	0 8	373 π	37 03	182
Hartburn (Wallington)	Mr. C. M. Fox	5	1 0	399	29·86	...
D Morpeth (Meldon Park)	Mr. J. Finlay	5	1 0	...	29·79	153
D " (Bothalhaugh)	Hon. & Rev. W. C. Ellis ...	5	0 10	35 $\uparrow$	27 98	112

DIVISION X.—NORTHERN COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1880	Days on which ·01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level		
NORTHUMBERLAND—(con.)						
D Morpeth (Bothalhaugh).....	Hon. & Rev. W. C. Ellis	5	0 10	35 ?	29·78	...
Rothbury (Brenckburn Priory) ..	C. H. Cadogan, Esq.	8	1 0	300 T	29·79	141
D " (Whitton Tower)	Rev. Dr. Ainger.....	5	1 0	410 T	32·78	166
" (Crag-side)	Mr. W. Bertram	8	1 0	400 T	29·80	144
Rochester (Byrness)	Rev. D. B. Nicholson...	5	0 10	700	42·12	...
Alwinton (Harbottle)	T. Thompson, Esq. ...	5	1 0	500 T	31·73	103
" (Biddleston)	Mr. P. Dodds	5	1 0	820 T	36·89	...
Alnwick Castle	The Meteor. Council ..	5	0 4	178 T	30·51	181
D Howick Hall	Rt. Hon. Earl Grey, K.G.	8	0 10	121 T	28·80	180
Ilderton (Lilburn Tower)	E. J. Collingwood, Esq.	10	6 0	300 T	32·73	...
Cheviot (Broadstruther)	G. P. Hughes, Esq. ...	8	4 0	1692 T	45·75	...
D Pawston [Coldstream]	B. P. Selby, Esq.	8	1 0	328 T	32·35	190
* Wooler (Milfield)	G. A. Grey, Esq.	5	0 8	200 T	28·70	...
Belford (Middleton Hall)	J. T. Leather, Esq., C.E.	10	3 0	240 T	27·24	...
CUMBERLAND.						
Ravenglass (The Grove)	J. Ross, Esq.	5	2 6	80 T	34·83	116
Braystones	J. D. Watson, Esq. ...	10	3 8	36 T	27·21	...
Scafel Pike	J. Maitland, Esq.	4	0 6	3200 T	53·96	...
Esk Hause	" " " " " "	4	0 6	2550 T	95·85	...
Sprinkling Tarn	(7) " " " " " "	4	0 6	1985 T	109·39	...
Wastdale Head	" " " " " "	4	0 6	247 T	81·03	...
Styehead Tarn	(8) " " " " " "	4	0 6	1472 T	118·40	...
† The Stye	(10) " " " " " "	4	0 6	1077 T	161·00	...
" (new gauge)	" " " " " "	8	...	1077 T	163·40	...
Gabel Howes	" " " " " "	4	0 6	...	95·54	...
Taylor's Gill	(9) " " " " " "	4	0 6	1077 T	134·40	...
St. Bees (Abbot's Court)	A. Hodgetts, Esq.	5	1 1	20 L	29·10	179
† Seathwaite	(11) Mr. Dixon	4	0 6	422 T	120·32	219
D † "	(11) " " " " " "	5	1 0	422 T	120·12	219
* "	(11) H. C. Marshall, Esq....	5	1 0	420 ?	112·52	...
Ullscarf	J. F. Bateman, Esq. FRS	7	1 0	2100 T	103·00	...
† Wythburn Vicarage. monthly	(20) Rev. Basil Lawson.....	8	1 0	574 T	81·50	...
D " " " " " "	(20) " " " " " "	5	1 0	574 T	85·64	157
† Helwellyn (Birk-side)	(21) J. F. Bateman, Esq., FRS	7	1 0	1900 T	69·30	...
† Wythburn	" " " " " "	7	1 0	580 T	81·60	...
Rosthwaite (Castle Lodge)	G. J. Symons, Esq., FRS.	8	1 0	305 T	89·50	...
† Watendlath	(13) " " " " " "	8	1 0	867 T	69·00	...
Armboth	J. F. Bateman, Esq., FRS	7	1 0	550 T	72·30	...
" Fells (The Pewitts) ..	" " " " " "	7	1 0	1650 T	78·10	...
Helwellyn (Whiteside)	" " " " " "	7	1 0	2100 T	63·90	...
† Whitehaven (Irish Street)	Dr. P. Anson	5	1 1	21 T	31·42	138
D † Keswick (Barrow House) ...	(46) S. Z. Langton, Esq. ...	8	0 6	282 T	64·70	209
Loweswater (Waterend)	Mrs. Jackson	5	1 0	432 T	44·81	183
† Ullswater (Hallsteads)	(36) A. Marshall, Esq.	10	4 0	490 T	48·00	...
D † Keswick (Deer Close)	(45) H. C. Marshall, Esq. ...	7	1 9	300 T	55·16	201

NOTE.—The numbers marked thus (11) on this and the next page refer to the Map facing p. [144] of *British Rainfall, 1877.*

DIVISION X.—NORTHERN COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which -01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level	1880	
			ft. in.	feet.	inches.	
CUMBERLAND—(con.)						
†Keswick (Derwent Island)...(14)	H. C. Marshall, Esq....	5	0 7	280 T	45·84	213
† „ (Post Office).....(16)	Mr. Crosthwaite.....	8	6 4	270 T	55·81	204
†* „ („).....(16)	„ „ „.....	5	1 0	265 T	53·45	204
D „ (Shu-le-crow).....	Miss Mitchell.....	12	3 0	287 T	53·02	188
Whitehaven (Gilgarron Hall) ...	Mr. D. Galloway.....	5	4 9	470 T	38·35	169
D Cockermouth (Whinfell Hall) ...	W. Robinson, Esq. ...	5	2 0	265 T	45·61	208
D „ (Brandlingill).....	Capt. F. R. Sewell.....	5	1 0	320 T	44·26	182
†Bassenthwaite (Mirehouse).....	Mrs. Spedding.....	5	0 6	310 T	44·82	179
D Cockermouth (Derwent House...)	Dr. Dodgson.....	5	0 6	144 T	38·02	185
† „ (Higham).....	T. A. Hoskins, Esq. ...	5	1 0	478 T	41·19	187
D „ (Broughton Grange).....	G. S. Wilson, Esq. ...	5	1 6	209 T	34·37	190
†Penrith (Fell Lane, Fir Bank)...	T. Lester, Esq.	5	1 0	575 T	30·07	153
D „ (The Luham, Edenhall)..	G. Varty Smith, Esq...	5	1 0	270 T	29·02	174
D Blencowe School.....	T. Fawcett, Esq.	8	0 9	601 B	36·56	190
Maryport (Wyndham Row).....	R. Wilson, Jun., Esq..	5	1 6	350 T	28·34	...
„ (Netherhall).....	H. P. Senhouse, Esq...	8	0 6	27 T	26·56	...
Aspatia (Brayton Hall).....	Mr. J. Hammond.....	8	1 6	220	29·85	...
D „ (Brookfield).....	M. Lidbetter, Esq.....	5	0 9	124 T	28·22	176
D Alston (Love Lady Shield)..[21]	T. W. Dickinson, Esq..	5	1 0	1145 T	51·36	231
Carlisle (Wreay Vicarage).....	Rev. T. Lees.....	5	2 0	310 T	30·59	204
D Silloth (The Rectory).....	Rev. F. Redford.....	8	3 0	28 T	30·55	176
†Carlisle (Cemetery).....	I. Cartmell, Esq.	8	4 0	114 T	29·33	171
† „ (Scaleby Hall).....	R. A. Allison, Esq. ...	5	1 0	112 T	29·27	183
D Stapleton (Westfield House).....	T. H. Walker, Esq. ...	5	1 0	400	37·66	189
Kirkandrews-on-Esk Rectory ...	Rev. F. Taylor.....	5	0 6	100 T	33·92	...
WESTMORELAND.						
Kirkby Lonsdale.....	Mr. W. Harrison.....	5	1 2	209	46·35	...
D „ „ (Casterton).....	R. A. Clarke, Esq.....	8	1 0	305 T	48·63	184
„ „ (Biggins House).....	Miss Tomlinson.....	12	3 6	400 T	43·32	...
„ „ (Whelprigg).....	Mrs. Gibson.....	5	2 0	475 T	45·13	...
D Kendal (Kent Terrace).....	R. J. Nelson, Esq.....	5	1 6	146 T	45·06	183
D „ (Underfell).....	F. Wilson, Esq.....	8	4 0	300 B	42·38	192
D „ { „ }.....	„ „ „.....	8	1 0	300 B	45·67	192
„ { „ }.....monthly	„ „ „.....	8	1 0	300 T	45·66	...
D „ (Hawesmead).....	G. Braithwaite, jun. Esq.	8	0 6	175 T	45·60	227
Bowness (Matson's Grounds) ...	G. Healey, Esq.....	12	0 8	451 T	52·24	188
D Windermere (The Wood).....	Rev. G. Crewdson.....	8	3 2	322 T	58·47	176
D Ambleside (Brathay Vic.)...(56)	Rev. H. S. Callender...	5	1 3	150 T	67·45	204
D Elterwater (Woodlands).....(50)	E. Tucker, junr., Esq..	5	0 9	244 T	78·27	204
†Ambleside (Nook Cottage)....(51)	Mr. E. Hird.....	5	1 0	229 T	70·79	209
† „ (Lesketh Howe) (26)	F. M. T. Jones, Esq...	5	2 6	175 T	73·46	198
D†Grasmere (High Close).....(22)	E. B. W. Balme, Esq...	8	0 9	553	70·93	195
†Tebay.....	Rev. E. Holme.....	5	3 6	666 B	42·85	183
D Ravenstonedale (Browuber).....	J. Fothergill, Esq.....	5	3 0	826 T	35·61	198
Kirkstone Pass.....(34)	G. J. Symons, Esq. F.R.S	5	1 0	1500 T	75·34	...
D†Kirkby Stephen.....[8]	T. Mason, Esq.	5	1 0	574 T	36·60	158
D†Shap (Copy Hill).....(58)	Mr. W. Hoggarth.....	5	1 0	852 T	48·85	199

DIVISION X.—NORTHERN COUNTIES—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which ·01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level	1880	
			ft. in.	feet.	inches.	
WESTMORELAND—(con.)						
† Haweswater (Measandbecks) (41)	G. J. Symons, Esq. F.R.S	8	1 0	861	43·00	...
▮ Patterdale Hall (33)	Mr. R. Burn	7	1 3	490	75·62	197
† „ (Greenside Mine) (32)	Mr. T. Taylor.....	7	1 6	1000	83·56	...
▮ Appleby	Dr. Armstrong	5	1 0	442	33 12	181
Ullswater (Swarth Fell)..... (39)	G. J. Symons, Esq. F.R.S	8	1 0	1000	48·25	...
„ (Sharrow Bay) <i>mtly</i> (38)	A. Parkin, Esq.	5	0 7	500	40·68	...
„ „ „ „ „ (38)	„ „ „ „ „	8	1 6	500	38·00	...
† Lowther Castle [Penrith] ... (43)	Mr. W. Shand	8	3 0	750	32·54	128
▮ Brougham Hall [„] ... (53)	Mr. A. Lodge.....	5	5 5	470	31·61	163
▮ Milburn	Miss Robinson	5	1 0	634	32·71	166
† Hurth Syke [Alston] [20]	G. J. Symons, Esq. FRS	8	1 0	2000	55·70	...

DIVISION XI.—MONMOUTH, WALES, AND THE ISLANDS.

MONMOUTH.

▮ Newport (Gold Tops).....	T. Dyne Steel, Esq. C.E.	8	0 10	90	40·90	159
▮ Llanfrechfa Grange	F. J. Mitchell, Esq. ...	5	4 0	326	43·70	147
Tredunnoch	Rev. C. T. Salusbury...	5	4 0	170	39·33	168
Caerleon (Lansoar)	Rev. J. James	5	3 2	82	40·13	146
▮ Chepstow.....	H. A. Smith, Esq.....	5	1 1	150	39·61	161
▮ „ (Piercefield Park).....	H. Clay, Esq.....	5	1 6	300	39·27	156
Pontypool (Llanthewy Vach Rec.)	Rev. J. E. J. Machen...	5	2 3	200	45 66	161
▮ Newport (Llangibby Castle).....	D. Lawrence, Esq.....	8	3 0	...	40·38	158
▮ Tredegar (Bedwellty House) ...	J. Colquhoun, Esq. ...	8	1 0	972	65·37	211
„ (Ebbw Vale)	R. S. Jordan, Esq.....	5	1 0	918	59·82	...
Monmouth (Dingestow Court) ...	S. R. Bosanquet, Esq. .	5	1 0	250	34·90	...
▮ Abergavenny (Larchfield)	Dr. McCullough.....	5	1 0	220	39·47	164
Monmouth (Pentwyn)	Rev. J. T. Harding ...	5	1 0	191	39·03	148

GLAMORGAN.

* Cowbridge (Ham)	G. W. Nicholl, Esq. ...	8	1 4	96	34·22	132
Porthkerry (Buttrill)	D. Davis Joseph, Esq...	5	1 0	255	35·11	132
Cardiff (Landough)	H. Gooch, Esq., C.E....	5	1 0	110	36·10	138
▮ „ (East Moors)	T. Waring, Esq., C.E..	5	1 0	15	39·35	149
▮ „ (Cemetery).....	Mr. T. Haydyn	5	1 0	95	39·50	170
▮ „ (Castle)	Mr. A. Pettigrew	5	1 3	38	37·43	170
„ (Park Place)	W. Adams, Esq., C.E..	5	...	...	38·85	182
▮ Cowbridge (Ash Hall)	D. Owen, Esq.	8	1 0	315	45·99	189
Cardiff (Ely)	H. Gooch, Esq., C.E....	8	4 0	39	39·83	159
▮ „ (Penttyrch).....	F. G. Evans, Esq.....	5	1 1	100	41·80	180
„ (Lisvane)	H. Gooch, Esq., C.E....	5	1 0	136	37·29	169
Swansea (George Street)	A. W. B. Joyner, Esq.	5	1 0	22	36·54	174
▮ Neath	H. S. Ludlow, Esq. ...	5	1 0	240	48·53	188
„ (Glyncorwg)	D. Brown, Esq.	5	1 1	730	81·08	196
Aberdare (Ty Draw Treherbert)	D. Davis Joseph, Esq..	5	1 0	735	84·79	188
„ (Mardy)	W. T. Lewis, Esq., C.E.	5	2 0	431	56·03	...
▮ „ (Abernant)	E. Jones, Esq.	5	1 6	425	64·86	163
▮ Ystalyfera	Dr. D. Thomas	8	1 2	250	58·02	174

DIVISION XI.—MONMOUTH, WALES, AND THE ISLANDS—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which .01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level	1880	
			ft. in.	feet.	inches.	
CARMARTHEN.						
Llanelly Water Works.....	G. Watkeys, Esq.	4	4 6	216 T	35·51	127
† Carmarthen (Gaol).....	Mr. Rees	8	0 6	92 T	48·28	215
† „ (Joint Co. Asylum) ..	Dr. Hearder	8	1 0	189 T	43·60	188
Tegfynydd [Narberth]	H. S. Morgan, Esq. ...	5	1 0	158 T	49·72	171
Llandilo (Dynevov Castle)	Rt. Hon. Lord Dynevov	8	1 0	236 T	52·31	217
„ Llandovery	J. Watkins, Esq.	5	1 0	217 T	50·09	206
PEMBROKE.						
Pembroke (Stackpole Court).....	Rt. Hon. Earl of Cawdor	5	1 6	60 T	40·77	165
„ (St. Ann's Head).....	The Meteor. Council ...	8	0 8	150	32·64	189
Narberth Rectory	Rev. W. Wilson	8	1 4	...	46·36	176
„*Haverfordwest (High Street) ...	E. P. Phillips, Esq. ...	5	1 0	95 T	40·76	166
„ Narberth (Clynderwen).....	Mr. W. T. Mills.....	...	...	...	44·74	171
„ Solva	E. Robinson, Esq.	5	1 0	90 B	28·89	157
„ St. David's	Dr. W. P. Propert.....	5	1 0	189 B	35·63	156
„ Rosebush	E. P. Phillips, Esq. ...	...	...	...	59·38	168
„ Fishguard (Castle Hill).....	Dr. J. H. Wathen	5	0 10	200 B	41·94	145
„ Llechryd (Castle Malgwyn)	Mr. H. Howard	5	1 0	...	43·94	167
CARDIGAN.						
„ Lampeter (St. David's Coll.) (63)	Prof. A. W. Scott	8	4 0	420	38·61	153
„ Aberystwith (Goginan)	H. Trenwith, Esq.	5	2 6	290	47·46	188
„† „ (Gogerddan) (93)	Sir Pryse Pryse, Bart..	5	1 0	80 B	46·21	182
BRECKNOCK.						
Nanthir Reservoir [Aberdare] ..	T. L. Edwards, Esq.	5	1 0	860 T	58·01	...
„ „ „ [„] ..	„ „ „ „ ..	8	1 0	860 T	57·42	212
„ Brecknock ..	J. Kirk, Esq.	5	2 0	437 T	48·87	170
„ „ (Christ College)	W. S. Rawson, Esq. ...	5	1 0	430 T	45·88	152
„ „ (Watton Mount)	G. Overton, Esq.	5	5 0	450 T	45·54	...
RADNOR.						
„ Rhayader (Nantgwillt)	R. L. Lloyd, Esq.	5	1 0	767 B	62·77	201
„ Presteign (Hereford Street)	Mr. W. White	5	1 9	550	40·60	158
MONTGOMERY.						
† Llanidloes (Ystrad olwyn-fawr) 59	Mr. J. Jones ..	8	1 0	950	60·80	...
„ „ (Llidiart-y-waun School	Mr. D. Roberts	5	1 0	...	45·93	...
„ „ (Dolenog)	„ F. Roberts, Esq. ...	5	2 0	550	40·94	148
„ Newtown (Dolfor)	W. B. Pugh, Esq.	5	0 3	1027	40·01	191
„ Churchstoke (Mellington Hall) ..	P. Wright, Esq.	5	1 6	550 T	33·62	152
„ Newtown (Caersws)	W. Parry, Esq., M.D..	5	1 6	...	32·50	...
„ Machynlleth (Waenbwl)	Sir Pryse Pryse, Bart..	8	1 0	1380 B	53·50	...
„ Newtown (Llanwnnog)	Dr. Parry	5	3 2	...	38·90	180
„† Carno (Tybrite)	Miss Marsh	5	1 0	595 T	50·96	187

The numbers in parenthesis refer to the Map facing page 196 of *British Rainfall, 1875*

DIVISION XI.—MONMOUTH, WALES, AND THE ISLANDS—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which 91 or more fell.
		Diameter	Height Above Ground.	Height Above Sea level	1880	
			ft. in.	feet.	inches.	
MONTGOMERY—(con.)						
†Garthbibio (Lluest fawr) ... (49)	G. J. Symons, Esq., FRS.	8	1 0	990 T	54.30	...
†Llanwddyn (Daffrn-newydd) ...	" " "	8	1 0	750 B	48.74	149
† " " " " " " " " " " " "	" " "	8	1 0	800 B	46.34	154
† " (Hoel-y-ffridd)	" " "	8	1 0	800 B	62.52	168
† " (Cefnglas)	" " "	8	1 6	1650 B	74.20	...
FLINT						
Mold (Bryn Alyn)	Rev. R. B. Cooke	5	1 2	483 T	40.50	...
Hawarden [Chester]	Dr. Moffat	8	0 6	270	31.53	...
Flint (Soughton Hall, Northop) ..	J. Scott Bankes, Esq. ...	5	0 8	418	37.43	162
St. Asaph (Nantillys)	P. P. Pennant, Esq. ...	5	1 0	173 T	35.64	...
† Holywell (Bagillt)	A. O. Walker, Esq. ...	5	2 0	20 T	33.50	153
† Rhyl (Sedgley House)	W. T. Girdlestone, Esq. ...	5	2 4	21 T	31.72	148
† Prestatyn (Nant)	T. G. Dixon, Esq. ...	5	1 2	30 P	33.58	165
DENBIGH.						
† Ruabon (Wynnstay) ..new gauge	Mr. Middleton	12	3 0	484 T	42.80	198
Llangollen (Plas Berwyn)	Major Tottenham	5	0 6	440	47.59	160
Wrexham (Pack Saddle Res.) ...	F. W. Storr, Esq. ...	5	0 9	370 T	39.83	188
" (Cae Llwyd Res.) ...	" " " " " " " " " " " "	8	0 9	918 T	52.98	165
" (Plas Power)	Mr. J. Clark	5	1 0	472 T	42.15	165
" (Brymbo)	C. E. Darby, Esq. ...	6	6 9	632 T	40.07	...
† Rosset (Trevalyn Hall)	Capt. Griffith Boscawen. ...	5	1 0	58 T	34.80	185
† Denbigh (Vale Street)	J. Lloyd Roberts, Esq. ...	5	1 0	230 T	37.23	145
" (Dyffryn Aled)	P. W. Yorke, Esq. ...	5	1 2	650 T	47.49	159
Nannerch (Penbedw Hall)	Mr. W. McMurray ...	8	0 6	650 T	42.67	...
Abergele (Garthewin)	B. W. Wynne, Esq. ...	5	1 0	363 T	47.50	...
" (Kimmel Park)	Lady F. Hughes	5	0 8	250	38.18	...
Colwyn (Nant-y-Glyn) ..	A. O. Walker, Esq. ...	5	2 2	180 T	38.98	151
Abergele (Bryn Euryn)	Mr. T. Hutchings	5	1 0	125 T	37.63	153
MERIONETH.						
† Towyn (Peniarth)	Mr. G. Murray	5	2 0	12	45.65	150
† * Dolgelly (National School) ... (21)	Mr. Williams	5	1 6	43 T	60.50	170
" (Hengwrt)	Mrs. Lloyd	5	0 6	90 B	66.14	107
† " (Brithdir)	J. Hill, Esq. ...	5	1 6	465 T	63.61	...
† " " " " " " " " " " " "	" " " " " " " " " " " "	5	5 3	474 T	51.49	...
Trawsfynydd	Major Mathew	5	0 7	700	59.52	163
Bala (Henblas)	" " " " " " " " " " " "	5	1 0	544	54.99	155
† Llanderfel (Palé Gardens) ... (88)	Mr. T. Ruddy	8	1 0	606 T	52.73	199
† Rhiwbrydir	Major Mathew	5	10 0	1100	98.29	168
† Corwen (Rhug Gardens)	Mr. J. Bennett	5	1 0	500	44.13	177
CARNARVON.						
Pwllheli (Bodfaen)	Major Mathew	5	4 9	80	42.30	153
* Llanystumdwy (Talarvor) ... (16)	" " " " " " " " " " " "	5	3 0	50	37.30	195
† * Port Madoc	" " " " " " " " " " " "	5	3 0	10	53.77	193
* Llangybi (Cefn)	" " " " " " " " " " " "	5	1 1	200	49.64	144

DIVISION XI.—MONMOUTH, WALES, AND THE ISLANDS—(continued.)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which ·01 or more fell
		Diameter	Height Above Ground.	Height Above Sea level	1880	
CARNARVON—(con.)						
Pen-y-gwryd (85)	Mr. H. Owen ..	8	...	860	82·99	143
Carnarvon (Cocksidia) (39)	Major Mathew ..	5	1 1	120	40·26	171
†Llandudno (Warwick House) (29)	Dr. Nicol ..	8	0 8	99 A	35·57	154
ANGLESEA.						
D Menaifron..... (23)	Rev. W. W. Williams.	5	1 0	14 A	39·63	189
D Llangadwaladr (Bodorgan)	Mr. J. Ellam ..	8	4 0	...	37·07	171
D Rhianva [Bangor].....	Capt. E. H. Verney, R.N.	8	1 5	24 L	43·29	155
Holyhead	The Meteor. Council ...	8	1 2	44	34·75	183
Llanerchymedd Llwydiarth Esgob	T. Pritchard, Esq.	5	1 6	112 L	43·15	158
D Bodewryd (Rhosybol)	Rev. D. Morgan.....	5	1 6	170	43·53	139
ISLE OF MAN.						
Calf of Man	Bd. of Northern Lights	...	...	...	19·04	...
D Douglas (Derby Square)	P. Killey, Esq.	5	1 1	78	37·38	169
D „ (Victoria Road)	H. Story, Esq.	8	1 0	120 L	37·95	193
„ (Cronkbourne)	The Meteor. Council ...	...	0 10	138	37·51	178
Point of Ayre.....	Bd. of Northern Lights	...	...	...	19·97	123
ISLES OF SCILLY.						
St. Mary's	The Meteor. Council ...	8	1 6	77 L	36·02	216
JERSEY.						
St. Helier (Noirmont)	The Meteor. Council ...	8	1 0	270	40·19	207
D St. Aubins	J. E. Vibert, Esq.	8	1 0	140 B	39·17	176
„	„ „ „ ..	8	18 4	155	33·01	...
D Millbrook	P. Langlois, Esq.	5	1 0	50 L	39·63	188
GUERNSEY.						
D Guernsey (Grange Road)	Mrs. Mansell ..	5	1 0	174 B	43·69	188
„ (York Place)	Dr. Hoskins, F.R.S. ...	12	12 0	204 B	44·89	166

SCOTLAND.

DIVISION XII.—SOUTHERN COUNTIES.

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which .01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level		
WIGTON.			ft. in.	feet.	inches.	
Mull of Galloway	Bd. of Northern Lights ...	...	...	...	24·23	119
Corsewall	" " "	...	3 4	22 ?	29·81	130
KIRKCUDBRIGHT.						
Little Ross	Bd. of Northern Lights ...	...	3 3	130 ?	20·68	104
Kirkcudbright (Auchencairn) ...	A. Buchan, Esq.	...	...	20	34·10	...
Dalbeattie (Colvend Manse).....	Rev. J. Fraser	5	1 6	120 †	28·07	...
Twynholm (Cally).....	A. Buchan, Esq.....	5	1 0	87	39·86	...
Kirkbean (Woodside Cottage) ..	Mr. J. Foulds.....	5	3 0	33 †	33·25	166
*Dalbeattie	R. W. Macnab, Esq....	5	0 8	30 ?	33·58	151
d New Abbey (St. Mary's)	Rev. W. Downie	3	0 4	54 †	32·00	...
d Cargen [Dumfries]	P. Dudgeon, Esq.	3	0 4	80 †	30·77	159
New Galloway	R. McKay, Esq.....	8	20 0	220 †	33·66	185
Irongray (Drum Park)	D. J. Kay, Esq.	3	0 6	230	40·10	...
d*Carsphairn	J. Hannah, Esq.....	5	3 10	574 †	48·40	148
DUMFRIES.						
d Annan (Warmanbie).....	Mr. Elliot	8	3 0	100 †	33·43	156
d Dumfries (Crichton Inst.).....	Mr. A. Bruce	8	0 6	159 †	27·02	158
Canobie (Byreburnfoot)	W. Doughty, Esq.....	3	0 6	160	34·75	129
Langholm (Caulfield)	J. C. Little, Esq.	3	0 3	750 †	41·90	...
" (Ewes School)	Mr. J. C. Lyall	3	0 3	450 †	50·30	...
d Thornhill (Capenock)	T. S. Gladstone, Esq...	5	0 9	300	33·30	124
Durrisdeer (Drumlanrig Castle)	A. Buchan, Esq.	3	0 6	191	33·80	...
Moffat (Ericstane)	Mr. Welsh	...	...	550	47·00	...
Sanquhar (Wanlockhead).....	Mr. G. Dawson	3	0 5	1330 †	56·41	166
ROXBURGH.						
New Castleton (The Flatt)	J. Elliot, Esq.	3	0 9	350 †	36·60	...
" " (Kirndean)	Miss Elliot	3	0 9	400 †	43·10	...
d Teviothead Manse	Rev. R. Young	3	0 9	550 †	50·25	190
Hawick (Wolfelee)	Sir W. Elliot, Bt., F.R.S.	5	0 6	601 †	38·33	...
" (Branxholme)	W. E. Lockhart, Esq...	5	0 2	451	33·41	...
" (Goldielands)	Prof. Elliot.....	3	0 8	534 †	34·49	...
" (Kirkton)	Mr. J. Welsh	3	0 6	759 †	32·90	...
d* " (Silverbut Hall)	Mr. D. Elder	5	4 0	512 †	32·75	181

DIVISION XII.—SOUTHERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which ·01 or more fell
		Diameter	Height Above Ground	Height Above SeaLevel	1880	
ROXBURGH—(con.)						
*Jedburgh (Sunnyside)	G. Hilson, Jun., Esq...	5	6 0	351 A	27·08	139
D St. Boswell's (Elliston).....	The Hon. G. Dalrymple	8	1 0	350 B	28·61	165
D Kelso (Springwood Park)	Mr. G. Wemyss.....	10	1 0	130 L	27·38	187
D Melrose (Abbey Gate)	Mr. A. Dodds	5	0 6	280 T	31·86	211
D Wooplaw [Galashiels]	J. Murray, Esq.....	5	1 0	880 A	29·42	194
" "]	" "]	3	1 0	880 A	27·08	194

DIVISION XIII.—SOUTH-EASTERN COUNTIES.

SELKIRK.						
Galashiels (Abbotsford Rd.)	Dr. Somerville	5	0 8	412 T	33·45	193
PEEBLES.						
Glenrath (Manor)	Mr. S. Linton	5	1 2	764 A	37·27	...
Eddlestone (Portmore)	W. H. Cameron, Esq... ..	...	...	1000	43·08	193
d N. Esk Reservoir [Penicuik] ..	Mr. J. Garnock	11	0 6	1150 A	36·90	148
BERWICK.						
Coldstream (The Hirsell)	Mr. Cairns	3	0 7	150	26·87	...
„ (Milne Graden)	A. Buchan, Esq.	8	0 8	103 P	19·10	...
d Lauder (Thirlestane Castle)	Mr. J. Whitton	3	0 3	558 T	29·90	...
d Marchmont House	Mr. P. Loney	5	1 0	500 T	37·03	214
Berwick (Paxton Ho.)	A. Buchan, Esq.	5	0 6	90	27·04	...
St. Abb's Head	Bd. of Northern Lights ..	...	0 4	211 P	23·74	119
HADDINGTON.						
Haddington Asylum	A. Buchan, Esq.	5	1 0	235	29·51	...
d East Linton	Mr. J. Storie	3	0 3	90 T	26·38	148
Prestonkirk (Smeaton)	A. Buchan, Esq.	...	...	..	24·65	...
Drem (Craigielaw)	„ „	5	...	...	26·91	...
North Berwick (Seacliffe)	„ „	8	5 0	80	24·03	...
EDINBURGH.						
Moorfoot Hills (Gladhouse)	W. H. Cameron, Esq... ..	...	...	900	38·78	191
Pentland Hills (Crosswood)	„ „ „	...	...	950	39·90	...
Penicuik (Edgelaw)	„ „ „	...	...	...	40·47	167
Pentland Hills (Harper Rig)	„ „ „	...	...	900	34·80	...
„ „ (Harehill)	„ „ „	...	...	...	53·20	...
„ „ (Loganlea)	„ „ „	...	...	850	50·70	...
Rosewell Asylum	A. Buchan, Esq.	5	0 6	695	29·19	...
Mid Calder (New Park House) ..	„ „ „	...	...	...	24·64	...
Pentland Hills (Glencorse)	W. H. Cameron, Esq... ..	...	0 6	787	43·15	154
„ „ (Harlaw)	„ „ „	...	0 1	800	34·30	..
„ „ (Clubbiedean)	„ „ „	...	...	750	35·40	139
†Dalkeith	A. Buchan, Esq.	4	0 4	183	23·58	...

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which ·01 or more fell
		Diameter	Height Above Ground	Height Above Sea Level	1880	
			ft. in.	feet.	inches.	
EDINBURGH—(con.)						
Pentland Hills (Bonally)	W. H. Cameron, Esq... ..	...	...	...	36·00	...
Colinton (Fernelaw).....	J. Leslie, Esq., C.E. ...	11	0 6	500	34·40	...
d Gilmerton Station	Mr. J. J. Bell	5	0 6	240	30·12	145
Liberton (Alnwick Hill)	W. H. Cameron, Esq... ..	...	...	400	34·48	153
d Inveresk	Mr. McAuslane	9	2 0	30 f	28·60	139
d Costorphine (Meadowfield)	Miss Paterson	8	9 4	155 f	22·67	147
Edinburgh (Charlotte Square)... ..	J. Leslie, Esq., C.E. ...	11	0 6	230	24·86	...
" { " " }	A. Buchan, Esq.....	12	63 0	300	18·96	...
" (Cumin Place)	"	5	1 0	274	30·08	...
" (Streatham Ho.).....	"	...	...	...	26·10	...
Leith	"	5	0 5	80	25·43	...
"	The Meteor. Council ...	8	1 8	22	20·62	175
LINLITHGOW.						
Linlithgow (Rockville)	A. Buchan, Esq.....	5	0 5	260	28·08	...

DIVISION XIV.—SOUTH-WESTERN COUNTIES.

LANARK.

Biggar (Wiston)	Mr. W. Core	3	0	8	860	7	39-60	...
D Douglas (Newmains)	Mr. J. Russell	3	0	4	783	7	43-58	187
D Biggar (Cambus Wallace)	Captain Paul	6	0	6	748	7	29-73	189
D Lanark (Ridge Park)	C. Lindsay, Esq.	5	0	4	634	7	28-82	159
Dalzell House	J G C Hamilton, Esq, MP	6	4	7	87	7	25-97	121
Hamilton Water Works	Mr. R. Watson	7	0	9	432	7	32-60	...
„ (Bothwell Castle)	Mr. A. Turnbull	10	18	0	146	7	23-45	135
†Cambuslang (Bushy Hill) <i>new g.</i>	Dr. Muirhead	5	1	0	146	7	31-59	182
D Airdrie (Hillend Reservoir)	Mr. W. Ritchie	6	4	6	620	7	33-00	101
Glasgow (Observatory)	Prof. Grant, F.R.S. ...	5	0	1	180	7	32-65	...

AYR.

	Ballantrae (Glendrishraig).....	P. Murdoch, Esq.	5	1	0	450	33-38	...
	Girvan (Almont)	A. Buchan, Esq.	...	...	...	...	40-62	...
D	„ (Pinmore)	Hugh Hamilton, Esq. ...	5	1	0	187 ½	41-90	184
	„ (Turnberry)	Bd. of Northern Lights	...	...	...	...	36-23	133
	Ayr (Auchinlee)	J. Drennan, Esq.	6	4	0	36 ½	28-97	...
D	Old Cumnock	Mr. J. Ballantine	5	1	3	380 ½	34-50	170
	Kilmarnock (North Craig)	J. M. Gale, Esq., C.E. ..	12	0	6	310	33-88	...
†	„ (Annanhill)	W. H. Dunlop, Esq. ...	10	0	10	165 ½	31-94	191
	Ardrossan	The Meteor. Council ...	8	1	0	10	33-36	191
D	Dalry (Carshead).....	A. B. Aitken, Esq. ...	5	1	2	160 ½	36-80	179

RENFREW.

Gorbals's Dist.	{	Ryat Lynn	J. M. Gale, Esq., C.E..	8	0	5	310	41·00	...
		Waulk Glen	" "	12	0	5	280	38·55	...
		Middleton	" "	12	0	5	550	45·35	...
		Nither Cairn	" "	...	...	700	55·15	...	

DIVISION XIV.—SOUTH-WESTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which ·01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level	1880	
			ft. in.	feet.	inches.	
RENFREW—(con.)						
Paisley W. Works { Stanely Reservoir	R. Sharp, Esq.	12	1 0	190	37·19	...
{ Back Thornlymuir	„ „	12	1 0	646	43·94	...
{ Muirhead	„ „	12	1 0	482 ∇	41·91	...
{ Springside	„ „	12	1 0	532	46·54	...
Paisley (Ferguslie House)	Mr. J. Thomson	3	0 3	85	32·69	166
Glasgow (Queen's Park)	Mr. D. McLellan	8	0 5	144 ∇	32·09	143
Shaws W. Wks (Compensation Res)	J. Wilson, Esq., C.E.	6	0 9	600	50·50	...
„ „ (Loch Thom)	„ „ „	5	1 0	643	57·03	217
„ „ (Mansfield)	„ „ „	5	1 0	580	55·08	215
Greenock	A. Buchan, Esq.	...	...	...	45·18	...
„ (Hole Glen)	J. Wilson, Esq., C.E.	5	1 0	603 ∇	55·13	195
„ (Glenbrae)	„ „ „	6	0 9	574 ∇	52·70	...

DIVISION XV.—WEST MIDLAND COUNTIES.

DUMBARTON.

Helensburgh (Lyleston)	Forrest Frew, Esq.	...	...	...	37·20	...
Alexandria (Auchendennan) ...	A. Scott, Esq.	6	0 9	...	38·50	...
Helensburgh Water Works)	Mr. T. Murray	6	0 3	296 ∇	40·04	160
Garelochhead (Arddarroch)	J. White, Esq.	5	0 9	80	64·15	...
Arrochar	Rev. J. Dewar	5	0 9	10	69·35	...

STIRLING.

Strathblane (Mugdock Reservoir)	J. M. Gale, Esq., C.E.	8	0 6	320	44·80	...
Falkirk (Kerse)	A. Brown, Esq.	8	1 0	...	26·90	...
Killearn (Old Ballikinrain)	Miss Anstruther	5	0 6	200	42·54	177
Stirling (Polmaise Gardens)	Mr. W. Ritchie	6	1 3	12	27·90	...
Ben Lomond	J. M. Gale, Esq, C.E.	...	...	1800	70·70	...

BUTE.

Arran (Pladda)	Bd. of Northern Lights	...	3 3	55 ∇	32·66	131
Holy Island (Lamlash Light Ho.)	„ „ „	...	...	...	26·10	...
Rothsay (Mount Stuart)	J. Kay, Esq.	3	2 6	100	39·80	...
„ (Barone Cottage)	„ „	5	1 0	116 ∇	38·31	186

ARGYLL—(MAINLAND.)

Lochgilphead (Kilmory) <i>Snowdon</i>	Capt. Sir J. W. P. Orde, Bt	5	...	...	49·20	185
„ (Auchnaba)	„ „ „	5	1 0	40	47·84	179
„ (Callton Mòr or Polta Loch)	Mr. J. Russell	3	4 6	65	42·17	185
„ (Ederline)	Mr. D. McLeod	5	1 0	130	56·04	137
Inverary Castle	Mr. G. Taylor	6	0 6	28 ∇	57·10	...
Dalmally	J. B. Lawes, Esq., F.R.S.	5	1 0	200 ∇	59·52	184
Oban (Dunollie Castle)	A. Buchan, Esq.	5	1 2	55	51·22	...
Appin (Aird's)	R. Macfie, Esq.	5	0 11	41 ∇	47·01	...
Strontian (Laudale)	A. Fletcher, Esq.	8	1 4	15	67·83	211
„ „	„ „ „	5	0 9	15 ∇	70·88	211

DIVISION XV.—WEST MIDLAND COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1880	Days on which ·01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level		
			ft. in.	feet.	inches.	
ARGYLL (MAINLAND)—(con).						
D Loch Sunart (Glenborrodale) ...	J. J. Dalgleish, Esq. ...	5	0 2	60 L	52·28	226
Ardnamurchan	Bd. of Northern Lights ...	...	3 6	82 ?	36·41	156
Loch Eil (Corran)	" "	...	0 4	14 ?	73·04	169
ARGYLL—(INSULAR.)						
Cantire, Mull of.....	Bd. of Northern Lights ...	...	...	279 ?	34·32	139
" (Campbeltown, Devaar)	" "	...	3 4	75 ?	39·79	154
" (Skipness Castle)	Mr. P. Maclean	6	1 6	20 L	38 30	...
D " (Stonefield, Tarbert) ...	Colin G. Campbell, Esq. ...	3	1 3	90	61·99	204
D Islay (Ardbeg)	Mr. C. Hay	5	1 0	7 ?	43 01	202
" (Rhinns)	Bd. of Northern Lights ...	...	3 0	74 ?	30·61	141
" (Lochindaul).....	" "	...	...	...	37·57	105
" (McArthurshead).....	" "	...	...	...	50·41	154
D* " (Eallabus).....	J. S. B. Ballingall, Esq. ...	5	1 0	67 T	39·48	182
D " (Gruinart School House)...	Mr. D. Mac Gilp	5	1 0	214 T	37·93	175
" (Rhuvaal)	Bd. of Northern Lights ...	...	...	...	27·52	151
Jura (Lowlandmansbay)	" "	...	...	...	47·97	135
" (Fladda)	" "	...	...	...	28·02	112
Lismore (Mousedale)	" "	...	3 4	37 ?	36·60	141
Mull (Earraid)	" "	...	...	...	31 00	106
" (Calgary)	J. M. Mackenzie, Esq. ...	5	1 6	120	56·61	...
D " (Quinish)	J. N. Forsyth, Esq. ...	5	0 6	35	46·92	214
" Sound of	Bd. of Northern Lights ...	...	...	...	62·00	108
Tyree (Hynish)	" "	...	...	...	33·32	163

DIVISION XVI.—EAST MIDLAND COUNTIES.

CLACKMANNAN.

D Dollar	Mr. A. Blackwood	9	1 0	178	38·96	171
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KINROSS.

D Loch Leven Sluice	Mr. W. Clark.....	...	0 6	360	29·50	113
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FIFE.

D Dunfermline (Keavil)	L. Dalgleish, Esq.	5	0 2	150	23·36	139
" (Craigluscar)	W. Chisholm, Esq. ...	10	0 10	460 T	25·55	...
Falkland (Lothrie Reservoir) ...	A. Buchan, Esq.	5	0 1	700	34 33	...
D Strathmiglo (Leden Urquhart) ..	J. Thom, Esq.	8	0 6	615 T	30·02	171
D Auchtermuchty	Dr. Troup	5	1 0	179 T	28·12	152
Cupar (Kemback)	Capt. J. Makgill, R.E..	5	1 0	104 T	26·29	...
" (Asylum)	A. Buchan, Esq.	...	...	...	21·92	...
" (Birkhill)	" "	5	0 5	130	24·73	...
St. Andrews (Castle Cliff).....	" "	5	0 6	57	26·43	...
Leuchars (Ballmullo)	" "	5	0 9	100	20·49	...
Kilmany (Mountquhanie House).	D. Gillespie, Esq.	3	1 3	240	20·90	...

DIVISION XVI.—EAST MIDLAND COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which ·01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level	1880	
PERTH.						
d Culross (West Grange)	J. J. Dalgleish, Esq. ...	5	0 2	116 ∇	33·79	166
Menteith (Cardross)	H. D. Erskine, Esq. ...	8	0 10	120	35·00	...
Aberfoyle	J. M. Gale, Esq., C.E..	8	0 6	60	41·40	...
Dunblane (Kippenross)	J. Stirling, Esq.	6	0 4	150	27·70	...
Loch Dhu	J. M. Gale, Esq., C.E..	8	0 6	325	65·00	...
Ledard	" " "	...	...	1500	50·30	...
Loch Drunkie	" " "	8	0 6	420	51·80	...
" Vennachar	" " "	8	0 6	275	45·70	...
Lanrick Castle	A. Glover, Esq.	3	0 9	...	35·80	108
Bridge of Turk	J. M. Gale, Esq., C.E..	8	0 6	270	56·70	...
Loch Katrine (Tunnel Hill Top)	" " "	8	0 6	830	62·40	...
Between Glen Finlas & Bed Ledi.	" " "	8	0 6	1800	40·90	...
Auchterarder (Glensherup)	W. Chisholm, Esq. ...	11	0 11	900 ∇	46·52	...
Callander (The Gart)	A. Buchan, Esq.	...	...	...	40·93	...
" (Leny)	J. B. Hamilton, Esq.	4	0 4	340 ∇	42·10	...
Glen Gyle	J. M. Gale, Esq., C.E..	...	...	380	69·00	...
Muthill (Orchil)	A. Buchan, Esq.	...	...	...	35·40	...
d Auchterarder (Colquhalzie)	Mr. R. Morton	8	0 5	150 ∇	30·36	100
d Balquhiddie (Stronvar)	J. Dickson, Esq.	5	1 0	420	63·24	197
Crieff (Ochertyre)	A. Buchan, Esq.	3	0 9	325	31·28	...
Perth Academy	Dr. Miller, F.R.S.E. ...	15	64 5	79 ∇	23·43	...
" (Inchbank)	" " "	10	1 6	24 ∇	31·30	...
Errol (Fingask Castle)	A. Buchan, Esq.	5	0 9	80	25·39	...
d Dunkeld (Inver Braan)	Rev. J. M. B. Murdoch ...	...	...	500 ∇	31·76	144
" (H.R.S.)	The Station Agent	5	1 0	225	31·30	...
Meigle (Belmont Castle)	Mr. J. S. Robertson ...	8	37 0	237	24·40	...
" (Arthursstone House)	P. Carmichael, Esq. ...	5	2 3	187 ∇	27·46	...
" " Garden) ...	" " "	5	2 3	196 ∇	27·20	...
Blair-Athole	Mr. A. Cameron	5	1 0	423 ∇	24·48	136
d Dalnaspidal (H.R.S.)	The Station Agent	5	1 6	1450	51·27	199
FORFAR.						
d† Dundee (Westfield Cottage)	Charles Clark, Esq. ...	5	6 0	50 ∇	21·05	154
d† " (Eastern Necropolis) ...	Mr. W. R. McKelvie ...	3	0 5	167 ∇	23·50	116
d Broughty Ferry (Douglas Ho.) ...	Mr. K. Graham	5	5 6	60 ∇	23·34	153
d† Craigton	J. Watson, Esq., C.E..	5	0 3	481	29·66	139
† "	" " "	11	0 3	481	29·64	...
† Crombie Reservoir	" " "	11	0 3	522 ∇	30·37	...
† Hill Head	" " "	11	0 3	570 ∇	29·92	...
d Arbroath	A. Brown, Esq., LL.D.	8	2 0	60 ∇	24·41	133
Guthrie (Bolsham)	A. Buchan, Esq.	...	...	300	24·31	...
d Kirriemuir (Lintrathen)	J. Watson, Esq., C.E..	8	1 0	700	27·51	171
" ") monthly	" " "	8	1 0	700	29·10	...
" " Creich Hill)	" " "	8	1 0	1500	27·10	...
Montrose (Sunnyside Asylum) ...	A. Buchan, Esq.	5	0 5	200	25·25	...

DIVISION XVII.—NORTH-EASTERN COUNTIES.

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which ·01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level	1880	
KINCARDINE.			ft. in.	feet.	inches.	
The Burn [Brechin]	Col. McInroy	4	0 6	250	28·90	...
Fettercairn	A. C. Cameron, Esq. ...	5	0 4	230	27·43	152
Girdleness	Bd. of Northern Lights.	...	...	...	19·21	...
ABERDEEN.						
† Braemar	Mr. J. Aitken	8	0 9	1114	30·47	184
† Aboyne (Glentanar)	Mr. D. Thomas	5	1 0	576	28·82	173
„ Castle	Mr. G. H. Smythe	5	1 3	450	26·52	...
Drumoak (Drum Castle) <i>monthly</i>	Mr. G. Gammie	5	1 6	275	32·79	...
D Cromar (Logie Coldstone Manse)	Rev. G. Davidson	5	1 0	694	27·10	171
„ („ „ Loanhead)	Mr. A. Farquharson ...	5	1 0	743	27·11	189
„ (Tillypronie)	Mr. R. Littlejohn	5	1 0	1120	26·59	173
† Aberdeen (Rose Street) <i>new g.</i>	A. Cruickshank, Esq. ...	5	0 5	95	27·35	...
„	The Met. Council	8	1 9	103	29·49	196
D „ (Gordon's Hospital) ...	J. Dale, Esq.	8	1 6	63	28·79	194
D Midmar (Blackstock)	Mr. J. Barron	5	0 8	570	27·53	151
D „ (Dunecht Observatory) ..	Rt. Hon. Earl Crawford ..	8	0 11	461	24·18	179
D Skene (Kinmundy)	Miss E. Johnston	5	0 11	500	25·97	181
Monymusk (Cluny Castle)	Mr. McDonald	5	0 1	280	28·74	190
Inverury (Manar Farm)	Mr. J. Walker	8	15 0	270	28·69	198
„ Manse	Rev. J. Davidson, D.D. ..	9	0 0	220	29·06	...
Ellon (Tillydesk)	W. Hay, Esq.	11	0 4	349	28·63	...
D Old Deer	J. Walker, Esq.	5	2 0	135	31·62	201
D New Pitsligo	Mr. D. Sturrock	3	0 3	505	35·35	193
Kinnairdhead	Bd. of Northern Lights.	...	...	...	20·36	...
BANFF.						
D Tomintoul	Rev. A. Guthrie	6	1 1	1103	31·53	172
D Keith (H.R.S.)	The Station Agent	5	1 0	364	34·48	167
ELGIN OR MORAY.						
Grantown	Mr. W. Duncan	5	1 1	712	29·69	163
D „ (H.R.S.)	The Station Agent	5	...	...	27·73	162
Aberlour (Elchies)	Mr. J. Milne	8	1 6	560	32·81	148
D Forres (H.R.S.)	The Station Agent	5	1 0	20	20·65	123
Gordon Castle	Mr. Webster	8	1 3	107	28·99	...
D Elgin (Highfield)	A. Cameron, Esq.	5	0 11	80	24·16	169
D Burghead (H.R.S.)	The Station Agent	5	1 1	18	21·92	157
NAIRN.						
D Nairn (Acharaidh)	A. Clarke, Esq.	8	1 0	60	22·75	167
„	The Meteor. Council ...	8	1 9	84	23·21	180

DIVISION XVIII.—NORTH-WESTERN COUNTIES.

WEST ROSS.†

† Loch Alsh (Inverinate House) ...	Mr. McDonald	5	3 0	150	69·75	163
D Strome Ferry (H.R.S.)	The Station Agent	5	1 0	40	52·46	208

Including Cromarty.

DIVISION XVIII.—NORTH WESTERN COUNTIES—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain. 1880	Days on which 61 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level		
			ft. in.	feet.	inches.	
WEST ROSS—(con.)						
Strathconan [Beauly]	Mr. D. McIver	5	1 0	450	46·54	182
Loch Vraon	J. D. Baldry, Esq., C.E.	8	0 7	750	43·15	...
Lochbroom (Loch Drome)	„ „ „	8	0 7	850	43·13	...
Braemore House	„ „ „	8	0 7	750	42·85	...
„ Lodge	„ „ „	8	0 7	100	53·51	...
d Lochbroom	Mr. M. Macleay	5	0 6	48	46·16	220
Isle of Lewis (Stornoway)	Bd. of Northern Lights	...	3 4	31 ?	28·21	162
„ („ „)	The Meteor. Council	...	...	...	33·68	200
„ („ „ Lewis Castle)	A. Buchan, Esq.	5	0 10	82	47·35	...
„ (Butt of Lewis)	Bd. of Northern Lights	...	3 6	...	31·34	165
EAST ROSS. ‡						
Achonachie Lodge [Beauly]	W. C. Preston, Esq. ...	5	1 0	125 B	29·41	213
Cromarty	Bd. of Northern Lights	...	3 4	28 ?	22·06	...
*Invergordon Castle	B. B. Æ. McLeod, Esq.	5	1 0	25 ?	25·49	152
d Alness (Ardross Castle)	Mr. R. Massie	5	1 0	450 A	33·43	179
*Tain (Fearn)	R. Gordon, Esq.	5	1 0	58 A	18·28	...
„ (Springfield)	Mr. E. McLardy	5	3 6	80	19·21	...
WEST INVERNESS.						
Loch Shiel (Kinlochmoidart) ...	W. R. Macdonald, Esq.	5	0 6	27	54·20	238
d Fort William (Public School) ...	C. Livingstone, Esq. ...	5	0 3	36 A	72·34	225
d Loch Sheil (Glenaladale)	Major Macdonald	5	1 0	50 ?	98·90	225
Glenquoich	A. Buchan, Esq.	8	2 0	660	101·05	...
Isle of Skye (Oronsay)	Bd. of Northern Lights	...	0 6	15 ?	36·30	140
d „ (Broadford)	Mr. Logan	5	1 0	45	57·90	143
„ (Kyle Akin)	Bd. of Northern Lights	...	0 2	3 ?	51·44	140
„ (Sligachan)	Mr. Butters	5	1 0	40 T	86·62	...
d* „ (Portree)	Mr. J. Grant	5	1 3	165 A	65·03	219
Rona	Bd. of Northern Lights	...	...	...	42·90	144
Barrahead	„ „ „	...	3 0	640 ?	25·47	119
S. Uist (Ushenish)	„ „ „	...	0 4	157 ?	42·35	193
N. Uist (Monach)	„ „ „	...	...	...	38·40	145
„ (Spanish, Loch Maddy) ..	C. Shaw, Esq.	5	1 0	30	64·79	...
Harris (Island Glass)	Bd. of Northern Lights	...	3 4	50 ?	40·42	153
EAST INVERNESS.						
Roy Bridge (Kinchillie)	J. Hutton, Esq.	5	1 0	407 T	49·36	...
d „ „ (Brae Lochaber) ...	Sergt. A. Fraser	5	1 0	306 T	47·81	202
*Laggan	Mr. A. McIntosh	5	0 9	821 A	38·28	197
Aviemore H.R.S.	The Station Agent	5	1 0	...	28·67	...
Strath Errick (Farraline House) ..	Capt. Fraser	3	0 6	700 T	48·25	...
Glen Strathfarrer (monthly)	Mr. D. Fraser	5	1 0	461 T	49·50	...
Beauly (Beaufort Castle)	Mr. W. Anderson	5	4 0	...	26·45	116
d Inverness (H.R.S.)	The Station Agent	5	...	...	24·69	139
† „ „ (Culloden House)	D. Forbes, Esq.	6	4 0	104 T	23·65	...
d Cawdor [Nairn]	J. Joss, Esq.	5	1 0	260	29·79	171

DIVISION XIX.—NORTHERN COUNTIES.

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which -01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level	1880	
SUTHERLAND.						
Invershin	Mr. G. Young	5	4 0	20 1	29·67	...
▮ Golspie (H.R.S.)	The Station Agent.....	5	0 9	27	26·59	102
▮ „ (Dunrobin Castle)	Mr. D. Melville	5	1 0	7 1	28·63	172
„ („ „) <i>monthly</i>	„ „ „	3	0 3	6 1	26·57	...
Lairg	A. Buchan, Esq.	3	3 4	451	34·53	...
Assynt (Achumore)	J. Elliot, Esq.	3	0 9	150 ?	75·30	...
▮ Kinbrace H.R.S.	The Station Agent.....	5	1 0	...	29·29	176
Scourie.....	J. Simpson, Esq.	3	0 5	26	46 00	...
▮ Forsinard H.R.S.	The Station Agent.....	5	1 0	...	40·36	204
Tongue Ho.....	A. Buchan, Esq.	3	0 5	45	33·92	...
Cape Wrath	Bd. of Northern Lights	...	3 6	355 ?	40·14	156
CAITHNESS.						
Wick	The Meteor. Council ...	8	1 9	77	25·87	195
† „ (H.R.S.)	The Station Agent.....	5	1 0	...	28·15	...
† „ (Nosshead)	Bd. of Northern Lights	8	4 8	127 ?	25·03	163
▮ † Watten (H.R.S.) ...	The Station Agent.....	5	0 9	75	29·29	219
▮ † Georgemas Junction (H.R.S.) ...	„ „ „	5	...	...	35·97	260
Thurso (Holburnhead)	Bd. of Northern Lights	3	0 8	60 ?	29·90	135
Dunnethead	„ „ „	...	3 0	...	15·20	...
Pentland Skerries	„ „ „	...	3 3	72 ?	20·45	...
ORKNEY.						
▮ S. Ronaldshay (Roeberry)	J. Gray, Esq.	5	1 2	101 7	32·75	202
Hoy (Cantickhead)	Bd. of Northern Lights	...	0 6	...	28·50	...
„ (Graemsay Sound, East=High)	„ „ „	...	3 4	27 ?	35·29	168
„ („ „ West=Low)	„ „ „	...	3 4	...	33 07	206
▮ † Pomona (Tankerness Hall)	S. Leitch, Esq.	5	0 9	12 1	31·42	216
„ (Deerness)	Rev. C. Clouston, LL.D.	5	...	...	35·29	...
Shapinsay (Balfour Castle)	Col. Balfour	4	0 6	50	32·30	...
▮ † Pomona (Sandwick)	Rev. C. Clouston, LL.D.	11	2 0	78	36·71	218
Stronsay (Auskerry)	Bd. of Northern Lights	...	...	...	18·55	...
Sanda (Start Point)	„ „ „	11	0 6	29 ?	26·49	...
North Ronaldsay	„ „ „	...	3 4	21 ?	33·08	124
SHETLAND.						
Sumburghead	Bd. of Northern Lights	...	...	...	27·32	...
„ (Dunroseness) ...	The Meteor. Council ...	8	1 0	84	36·63	239
Bressay Lighthouse	Bd. of Northern Lights	5	0 4	60	30·68	...
Stourhead	„ „ „	...	...	...	43·40	154
▮ East Yell	Mr. A. D. Mathewson..	5	1 0	180	38·68	263

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which -01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level	1880	
			ft. in.	feet.	inches.	
CLARE.						
Do Kilrush	Mr. M. Bourke	5	7 0	61 T	34·91	185
Do Ennis	J. Hill, Esq.	10	3 2	21 L	36·02	183
Do Miltown Malbay	M. Molohan, Esq.	5	1 0	400 ?	43·76	204
Do Corofin	J. W. Macnamara, Esq.	5	1 0	...	41·69	177

DIVISION XXI.—LEINSTER.

WEXFORD.

New Ross (Horetown House) ...	S. D. Goff, Esq.....	10	1	0	100 B	38-22	200
" „ (Longraigue).....	J. W. Deane, Esq.....	5	1	1	210 T	38-30	175
Enniscorthy (Castle Boro')	T. L. Bashford, Esq....	5	1	0	270 B	44-68	158
" „ (Ballyhyland)	J. Moffat, Esq.	5	1	0	420 B	44-64	...
Gorey (Courtown)	RtHon Earl of Courtown	5	3	0	80 ?	39-13	193

KILKENNY.

a	Piltown (Bessborough Park).....	Mr. I. Laidley	8	1	0	74	†	38-01	156
b	Rosbercon Castle [New Ross] ...	A. E. Graves, Esq. ...	6	2	6	60	†	35-43	136
	Tullougher [„] ...	D. A. Milward, Esq. ...	5	1	0	500	†	42-61	166
b	Inistioge (Woodstock)	Lady Louisa Tighe ...	5	4	6	400	†	42-53	187
	Stoneyford (Inisnag).....	Rev. J. Graves	5	1	4	224	†	30-89	...
	Kilkenny (Butler House).....	C. E. James, Esq., M.D.	5	1	0	198	†	28-53	...

WICKLOW.

Do Delgany (Innismore).....	Miss Connor	5	1	0	220	39·45	194
Do Enniskerry	Dr. E. E. Barrington...	10	0	9	275	44·86	198
Do Bray (Fassaroe)	R. M. Barrington, Esq.	10	5	0	250	44·67	188

CARLOW.

St. Mullins [Graigue]	C. Budds, Esq.	5	1	5	29	36·41	162
Bagnalstown (Fenagh House) ...	D. W. P. Beresford, Esq.	5	0	9	350	38·62	199
Carlow (Browne's Hill).....	R. C. Browne, Jun., Esq.	5	1	0	291	34·81	184

QUEEN'S COUNTY.

Abbey Leix (Blandsfort)	J. L. Bland, Esq.	8	3	0	532	7	35·69	200
" " " " " " " " " " " "	" " " " " " " " " " " "	5	2	0	532	7	37·05	...
Stradbally (Polesbridge)	Capt. Hastings Brooke	5	2	0	...	...	34·20	163

KING'S COUNTY.

Birr Castle	RtHnEarl of Rosse, FRS	8	0	8	183	35·31	200
" " "	" " " " " " " "	8	0	8	180	35·81	200
" Portarlington	Dr. Hanlon	5	1	2	240	33·42	215
" Rathangan (Clonbrin)	Mrs. W. Gresson	5	1	4	224	34·93	181
" Tullamore	H. J. B. Kane, Esq., C.E.	10	3	0	235	32·17	173

DUBLIN.

Dalkey (Bellevue Park)	Mr. J. Kevans	6	1	3	148	35·12	182
Do Monkstown (Easton Lodge)	Greenwood Pim, Esq.	8	0	8	90	37·94	169

DIVISION XXI.—LEINSTER—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which ·01 or more fell.	
		Diameter	Height above Ground.		Height above Sea Level		1880
DUBLIN.—(con.)							
†Dublin (FitzWilliam Square) ...	Dr. J. W. Moore	5	3	4	54 7	34·51	188
„ (Phoenix Park).....	Col. Martin, R.E.	8	1	0	164 7	36 23	191
D Glasnevin (Botanic Gardens) ...	H. W. Moore, Esq. ...	8	0	11	65 7	36·40	173
D Balbriggan	Rev. S. P. Warren ...	5	1	0	57 7	33·88	188
MEATH.							
D Clonee (Williamstown)	W. Johnston, Esq.....	5	1	0	300	35·87	202
D Trim	P. Malone, Esq., C.E.	10	4	2	180 7	31·60	157
D Navan (Balrath)	R. W. Walsh, Esq., C.E.	5	2	0	160	33·22	162
WESTMEATH.							
D Athlone (Twyford)	J. Hodson, Esq.....	5	5	0	188 7	40·15	198
D Belvedere (The Gardens)	C. Brinslay Marlay, Esq.	5	1	0	367 7	37·40	148
LOUTH.							
Stephenstown	Col. Fortescue	5	0	11	75 7	28·92	190
D Dundalk (Farndreg)	J. Barton, Esq.	5	1	0	90 7	27·04	152
„ (Ravensdale Park).....	Rt. Hon. Lord Clermont	8	1	0	360 7	38·74	163
D Greenore.....	T. Chambers, Esq.....	5	1	0	4 1	27·85	169
LONGFORD.							
Edgworthstown (Currygrave Ho)	J. Wilson, Esq.	8	1	1	260	38·47	...

DIVISION XXII.—CONNAUGHT.

GALWAY.							
Gort (Cregg Park).....	R. J. Lattey, Esq.....	5	3	0	130 7	37·03	175
D Galway (Queen's College).....	Prof. Larmor	16	9	0	30	40·99	198
D Ballinasloe (Kilconnell)	Rev. H. E. Muriel.....	5	2	6	320 7	39·76	184
D „	W. H. Kempster, Esq.	5	0	6	150 7	36·67	198
„ (Garbally)	Mr. J. Cobban	8	0	9	157 7	40·35	200
D Ahascragh (Clonbrock)	Rt. Hon. Lord Clonbrock	10	5	6	200 7	37·71	155
D Clifden (Kylemore)	Lord Ardilaun	5	1	0	105 7	77·00	230
Tuam (Gardenfield)	H. Kirwan, Esq.	5	1	0	155 7	41·71	...
„ („)	„ „ „	5	6	0	160 7	40·23	...
MAYO.							
Ballinrobe (Creagh)	Mrs. Knox	5	1	0	80	39·50	...
Westport (Oldhead House)	H. Wilbraham, Esq....	3	1	7	100 7	48·45	...
D Crossmolina (Enniscoe) ..	J. Pratt, Esq.....	5	0	11	50 ?	48·00	220
SLIGO.							
Collooney (Markree Observatory)	Mrs. E. Salles.....	5	0	6	110 7	39·68	...
„ („ „)	„ „ „	31	16	7	148 7	31·44	198
D Sligo (Mount Shannon).....	F. M. Olpherts, Esq. ...	5	4	5	70 8	37·30	183
Mullaghmore	The Meteor. Council ...	...	...	...	...	39·82	217

DIVISION XXII.—CONNAUGHT—(continued).

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which ·01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level	1880	
LEITRIM.						
o Carrick-on-Shannon	R. Bradshaw, Esq., M.D.	5	1 0	150 ?	32·26	174
o " "	Mr. J. Cox.....	5	1 0	160	30·89	120

DIVISION XXIII.—ULSTER.

CAVAN.						
o Killeshandra (Drummany)	H. M. Anketell Jones Esq.	10	32 6	292 A	34·32	189
o * Belturbet (Redhills)	Rev. E. Whyte Venables	5	0 9	208 A	32·97	189
o Lough Allen (Dowra)	H. Howe, Esq.	5	1 6	225	37·06	216
FERMANAGH.						
Enniskillen (Florence Court) ...	Earl of Enniskillen FRS	8	1 9	250 T	41·92	193
" (Lisbellaw)	R. Eadie, Esq.	5	1 0	200 ?	35·10	173
Brooksboro (Colebrook Park) ...	The Meteor. Council ...	...	1 0	240	38·12	177
MONAGHAN.						
o Rockcorry ..	Mr. W. R. Loudon ...	5	1 0	290 A	30·65	191
ARMAGH.						
Flurrybridge	Rt. Hon. Lord Clermont	8	1 0	340 A	35·65	139
o Edward St. Station [Newry] ...	J. L. D. Meares, Esq. ...	5	1 0	22 A	31·16	141
o Armagh Observatory	Rev. Dr. Robinson F.R.S	10	1 7	208 A	32·65	173
" "	The Met. Council	...	2 0	204	33·31	194
DOWN.						
Kilkeel	Rev. E. O'Brien Pratt	5	1 6	40	29·74	173
o Warrenpoint (Summer Hill)	Mr. B. M. Kernan	5	1 0	30 L	32·18	143
Newcastle (Fairleigh)	Rev. J. H. Seymour ...	5	1 5	12	40·19	169
o Rathfryland (Ballynagappoge) ...	J. Smyth, jun., Esq., C.E.	5	3 3	330	30·93	...
Castlewellan (Lough Island) ...	" " "	10	3 0	442 T	33·20	...
† " (Bann Res.)	" " "	8	1 0	440 T	33·80	...
o Rathfryland	B. B. Meek, Esq.	5	1 0	500	30·39	...
Banbridge (Katesbridge)	A. Mulligan, Esq.	5	1 0	230	29·76	155
o Seaforde	Col. Forde	8	0 5	180 A	33·52	169
o Banbridge (Corbet Reservoir) ...	J. Smyth, jun., Esq. C.E.	10	3 0	234 T	29·20	...
o† " (Milltown)	" " "	8	0 8	200 T	27·57	180
o† Waringstown	Major Waring	8	0 4	191 A	31·81	190
o Newtownards	Mr. M. Harbison	5	1 7	10	28·87	151
o Sydenham (Alma House)	R. Reade, Esq.	5	1 0	60	31·62	187
Donaghadee	The Meteor. Council ...	8	1 6	30	25·51	195
ANTRIM.						
o Aghalee [Lurgan]	Lancelot Turtle, Esq. ...	5	1 0	105 A	30·41	157
o† Belfast (Queen's College)	Mr. W. Taylor	11	7 4	68 A	28·76	151
o " (New Barnsley)	J. Firth, Esq.	5	1 0	200 T	34·17	187
o† " (Antrim Rd.)	G. Thompson, Esq. ...	7	7 0	144 T	30·77	176
White Abbey (Abbeyville)	Rev. R. W. Bland	8	1 9	63 A	30·41	180

DIVISION XXIII.—ULSTER—(continued)

STATIONS.	AUTHORITIES.	Rain Gauge.			Depth of Rain.	Days on which ·01 or more fell.
		Diameter	Height Above Ground	Height Above Sea Level		
			ft.	in.	feet.		1880	inches.
ANTRIM—(con.)						
†Antrim (The Manse)	Rev. J. H. Orr	5	1 0	150 N	24·49	144
Ballymena	A. Dawson, Esq.	5	1 0	150 T	36·01	217
d Larne (Carnlough)	J. Reside, Esq.	5	1 0	8	37·81	170
d Bushmills	Mr. D. Elliott	5	1 0	33 T	32·75	186
„ (Dundarave).....	F. Macnaghten, Esq....	5	1 3	162 T	34·20	203
LONDONDERRY.						
d Londonderry (Knockan)	Rev. H. F. Stevenson..	5	1 0	300 T	40·59	219
d*Garvagh (Moneydig)	H. R. Morrison, Esq ...	5	1 0	121 T	34·75	165
d Londonderry (Abercarn Road)...	Mr. J. Conroy	5	1 0	94 T	36·82	228
d „ (Asylum).....	T. Campbell, Esq., M.D.	5	3 8	38	37·18	207
d Limavady	C. D. H. Campbell, Esq.	5	4 0	81 T	32·62	213
d „ (Drenagh).....	C. T. McCausland, Esq	5	1 0	80	33·85	219
Bellarena	Sir F. W. Heygate, Bt.	5	1 0	12 T	34·51	192
Coleraine.....	A. D. Williamson, Esq.	5	1 4	25 T	33·50	156
d „	C. D. H. Campbell, Esq.	5	1 0	166 T	30·75	212
TYRONE.						
d Caledon Glebe	Rev. W. B. Armstrong	5	1 0	125 T	29·08	180
d Aughnacloy Archdeaconry	Rev. T. G. Stokes	5	4 6	254 N	33·28	163
Moy (Derrygally)	W. M. Bond, Esq.....	5	5 6	60	29·64	135
„ „ „	„ „ „	10	5 6	60	29·94	135
d Dungannon (Donaghmore) ..	J. Brown, Esq.	5	1 0	300 T	35·78	172
Beragh (Clogherny)	Rev. R. V. Dixon, D.D.	8	0 8	428	38·24	196
„ „ „	„ „ „	8	1 4	440	37·08	196
d Stewartstown (The Square)	A. Johnston, Esq.	5	1 4	350	34·90	178
d Dungannon (Allan Rock).....	Rev. St. A. Brenan ...	5	1 0	350 T	36·89	196
„ (Rockdale).....	Lt.-Col. Lowry	5	1 0	300 T	35·69	173
d Stewartstown (Ardtree Rectory)	J. M. Churchill, Esq...	5	1 0	191 T	35·03	204
d Omagh (Edenfell)	Col. Buchanan	8	7 0	280	33·72	218
DONEGAL.						
Inver	Rev. F. Carre.....	5	1 0	100	42·80	...
d Donegal (Revelin House)	Rev. S. R. Craig	5	2 0	20 B	43·67	224
Raphoe (Convoy Ho.)	Col. Montgomery	5	1 0	110 T	48·93	223
„ „ „	„ „ „	5	4 0	109 T	46·60	223
d Ramelton	J. A. Mahony, Esq. ...	5	1 2	21	37·28	206
d „ (Ballyare)	G. M. W. Hill, Esq....	5	1 0	60 T	34·31	182
d „ (Killygarvan)	C. H. Cochrane, Esq...	5	0 10	11 L	38·39	213
d Buncrana (Rockfort).....	T. Colquhoun, Esq. ...	5	1 0	15	36·94	213
d Dunfanaghy	Mr. J. A. Sterritt	5	1 0	11 T	42·53	217
d Moville	Mr. J. Lowry	8	1 6	78 L	41·88	227
d Carndonagh	Rev. A. Pinkerton.....	5	1 0	255 T	41·39	207

G. J. S.

SUPPLEMENTAL TABLE OF IMPERFECT RETURNS,

AND OF THOSE WHICH, FOR VARIOUS REASONS, ARE NOT INSERTED IN THE GENERAL TABLES.

DIV.	COUNTY.	STATION.	OBSERVER.	RAIN GAUGE.			Depth of Rain.
				Diameter.	Height above Ground.	Height Above Sea Level.	
				in.	ft. in.	feet.	in.
II.	Sussex	Chichester (West Dean).....	Mr. E. McLaurin	—	—	—	34·7
"	"	Cowfold (Woldingfold).....	R. Ramsden, Esq.	5	1 6	160	33·6
"	Hants	Southampton (Eling House).....	W. C. Spooner, Esq.	5	1 0	20	31·4
"	"	Petersfield (Liss Place).....	G. E. Coryton, Esq.	7	0 7	250K	40·7
III.	Northampton	Northampton (St. Giles Street).. }	H. Terry, Esq.	5	5 0	253	31·8
		" (Haslewood Road). }					
V.	Wilts	Malmesbury (Charlton Park)	Rt. Hon. Earl of Suffolk ...	5	0 11	—	34·6
VII.	Lincoln	Horncastle (Bucknall)	W. Carter, Esq.	5	1 6	150	33·3
"	Derby	Burbage House	Mr. J. Farrer	5	2 10	1277K	47·5
VIII.	Lancashire	Lytham (Whalley Ho.)	S. Stott, Esq.	8	2 1	—	32·2
		" (Woodville Terrace)..... }					
"	Yorkshire	Broughton (Woodland Rect.)	Rev. E. C. Shawfield.....	5	3 9	1007	51·4
IX.	Westmoreland	Sheffield (Ranmoor)	J. Dixon, Esq.	10	3 6	600	44·7
X.	Carnarvon	Crosby Ravensworth (Reagill)	Mr. W. Wilkinson	8	0 6	890	38·1
XI.	Selkirk	Llanfairfechan.....	R. Luck, Esq.	5	0 8	150	44·7
XIII.	Haddington	Borthwickbrae [Hawick]	W. E. Lockhart, Esq.	8	0 2	8007	36·1
		Haddington (Millfield)	Mr. C. J. Dods	6	4 0	140	27·
"	Fife	"					
XVI.	Elgin	Dunfermline (Outh)	L. Dalgleish, Esq.	5	0 2	8907	30·9
XVII.	Sutherland	Dava H.R.S.	The Station Agent	5	1 2	10001	28·6
XIX.	Mayo.....	Laig H.R.S.	" "	5	—	—	29·7
XXII.		Hollymount (Cloona Castle)	J. Simson, Esq.	5	1 0	120	31·2
		" (Kilrush)					

ARRANGEMENTS
FOR THE
SYSTEMATIC OBSERVATION AND RECORD
OF THE
RAINFALL OF THE BRITISH ISLES.

Introductory and Historical.—I cannot help this section appearing to be egotistical ; the rainfall organization being entirely my own creation, it is impossible for it to be otherwise.

In the early part of the year 1859 I began collecting copies of records of the fall of rain, and early in 1861 wrote to all the observers of whom I was then aware, and asked them to send me all the records for the year 1860 that they could. I received 168 returns, and printed a table showing the total fall at all those places, being a larger number than had ever been classed together before. This publication gave a stimulus to observers, and from that time onwards their number has steadily increased until it now exceeds 2,000.

The amount of information published has increased even more, for whereas at first I printed only the total annual fall, I now publish essays on various branches of rainfall enquiry, and full abstracts of the most remarkable falls in short periods (ten minutes, half-an-hour, and so on), the heaviest falls in one day, tables of the monthly fall at several hundred stations, and, in short, give all the information which I can collect and which it seems expedient to print.

From the foregoing it will be evident that the compilation of the series of annual volumes (of which the short title is “British Rainfall, 1880,” &c.) is a very serious labour. The mere checking of two thousand returns takes a long time, and so does the due arrangement of the various facts reported, and by no means the least onerous matter is ensuring the accuracy of the printing of the whole.

During the first few years I not only gave my own time gratuitously to the work, but also bore all the cost of postages and of printing. It soon, however, became far too costly for me to bear it all, and my correspondents most kindly offered to share it with me. In 1865 the price of the annual volume to observers was fixed at five shillings, and, besides its sale, a small number of the observers (about 300, whose subscriptions are duly published) contribute annual sums varying from one to ten guineas, towards the general expenses of the work.

The existing state of matters is, therefore, shortly as follows. There are about 2,000 persons, well spread over England and Wales, Scotland and Ireland, each of whom is, I hope, strictly obeying the rules on

the following pages. To each of them I send annually on December 31st, blank forms to be returned to me filled with the facts observed at their station. At the same time I send a list of the various publications, and invite such pecuniary aid as it may be agreeable to them to send.

I ought, perhaps, to say what becomes of the subscriptions. I will mention some of the outlets. (1) There are nearly a thousand observers whose returns have to be collected, examined, discussed, and printed, who do not contribute sixpence towards the cost thereof. (2) In some localities it is impossible to obtain volunteer observers, and there the observers receive regular salaries. (3) The mass of office work, correspondence, &c., is far beyond what I can myself accomplish; two regular assistants are, therefore, employed, and besides that, considerable sums are paid for extra assistance at times of pressure. (4) The expenditure for printing and postages is very large.

In addition to the annual volume, I publish a monthly periodical, *Symons's Monthly Meteorological Magazine*, giving, in addition to a full chronicle of the progress of meteorology, details of rainfall at about 100 stations.

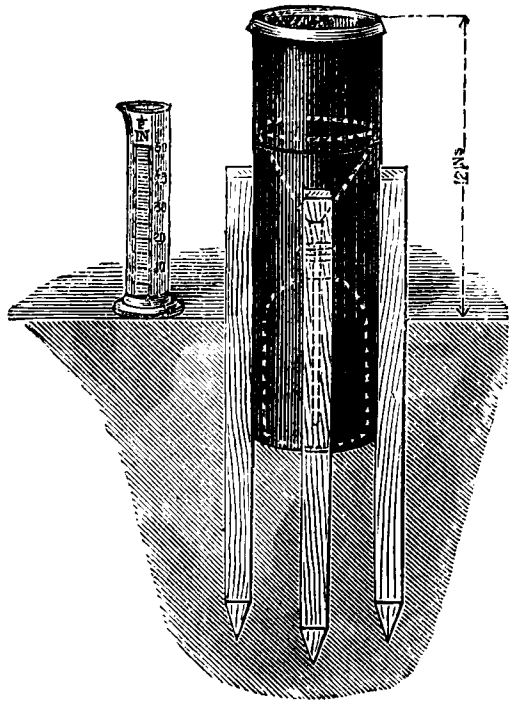
It may, perhaps, be added that it always affords me pleasure to reciprocate as far as possible the assistance which the observers render to me, either by affording them meteorological information, data as to the height of their stations above sea level, or advice as to the purchase of instruments.

In short, the state of the case is this: I have given myself up to the collection of statistics of rainfall—old ones and current ones: I invite everybody to help me, both with observations and funds, and I promise, in return, to render to all my correspondents all the help that is in my power.

Patterns of Rain Gauges, and where to buy them.—This is not a pleasant section to write, for there is considerable jealousy among the manufacturers, and I am almost certain to be accused of favouritism by some one. However, I have never patented any pattern of rain gauge, and, therefore, leave the field open to all.

Upon one point it is necessary to be despotic, viz., that amateurs never try to make their own gauges; they are almost certain to go wrong in some respect, and nothing is more vexing, both to the observers and to myself, than for it to be discovered after observations have been recorded for a long time that the labour of years is vitiated by an inaccurate instrument.

For use in ordinary localities I think the annexed is the best pattern; it is known as the Snowdon gauge, it is five inches in diameter, is easily fixed by four stakes, as shown; the glass jar when filled up to the top division holds 0·50 in., or half an inch, the bottle holds about three inches of rain, and, of course, in the very rare case of the fall exceeding that, the excess is saved by the can, and must be carefully measured. If made in japanned tin these cost from 16s. to 20s., but they are much stronger, and more durable, if made in copper, when they cost from 21s. to 30s. Negretti's have just brought out a very stout pattern, in galvanized iron, at a still lower price.



Where cost is no object, it is, by some, thought better to have a rather larger gauge, viz., eight inches diameter, costing from £2 to £3, but I do not advise it.

Snowdon pattern rain gauges can, no doubt, be obtained from any optician, but it may be convenient to give, in alphabetical order, the names and addresses of a few of the principal makers:—

CASELLA, L., 147, Holborn Bars, E.C.

HICKS, J. J., Hatton Garden, E.C.

NEGRETTI & ZAMBRA, Regent Street, W.; Holborn Viaduct; and Cornhill, E.C.

PASTORELLI, F., 10, New Bond Street, W.

Testing.—Wherever, and of whomsoever rain gauges may be bought, it is very desirable that the purchaser should insist upon having certificates of their accuracy. Rain gauges are examined, and certificates issued, by Kew Observatory, and by myself; the charge in each case is the same, namely, 2s. 6d.

Blank Forms.—All blank forms required for returns to myself, and additional ones wherever desired, are supplied gratuitously, and even those sold are charged at little more than their actual cost.

Change of Residence.—Each observer is requested to decide upon a specific name for his station, and to notify immediately any change in the position of the gauge or the discontinuance of his record.

SUGGESTIONS FOR SECURING UNIFORMITY OF PRACTICE AMONG RAINFALL OBSERVERS.

I.—SITE.—A rain gauge should not be set on a slope or terrace, but on a level piece of ground, at a distance from shrubs, trees, walls, and buildings—at the very least, as many feet from their base as they are in height. Tall-growing flowers, vegetables, and bushes must be kept away from the gauge. If a thoroughly clear site cannot be obtained, shelter is most endurable from N.W., N., and E., less so from S., S.E., and W., and not at all from S.W. or N.E.

II.—OLD GAUGES.—Old established gauges should not be moved, nor their registration discontinued until, at least, two years after a new one has been in operation, otherwise the continuity of the register will be irreparably destroyed. Both the old and the new ones must be registered at the same time, and the results recorded for comparison.

III.—LEVEL AND FIXING.—The funnel of a rain gauge must be set quite level, and so firmly fixed that it will remain so in spite of any gale of wind or ordinary circumstance. Its correctness in this respect should be tested from time to time.

IV.—HEIGHT.—The funnels of gauges newly placed should be 1 ft. above grass. Information respecting height above sea level may be obtained from the Editor.

V.—RUST.—If the funnel of a japanned gauge becomes so oxidised as to retain the rain in its pores, or threatens to become rusty, it should have a coat of gas tar, or japan black, or a fresh funnel of zinc or copper should be provided.

VI.—FLOAT GAUGES.—If the measuring rod is detached from the float, it should never be left in the gauge. If it is attached to the float, it should be pegged or tied down, and only allowed to rise to its proper position at the time of reading. To allow for the weight of the float and rod, these gauges are generally so constructed as to show 0 only when a small amount of water is left in them. Care must always be taken to set the rod to the zero or 0.

VII.—CAN AND BOTTLE GAUGES.—The measuring glass should always be held upright; the reading is to be taken midway between the two apparent surfaces of the water.

VIII.—TIME OF READING.—Nine a.m. daily ; if taken only monthly, then 9 a.m. on the 1st.

IX.—DATE OF ENTRY.—The amount measured at 9 a.m. on any day is to be set against the previous one ; because the amount registered at 9 a.m. of, say, 17th contains the fall during 15 hours of the 16th, and only 9 hours of the 17th. (*This rule has been approved by the Meteorological Societies of England and Scotland, cannot be altered, and is particularly commended to the notice of observers.*)

X.—MODE OF ENTRY.—If less than one-tenth ($\cdot 10$) has fallen, the cypher must *always* be prefixed ; thus, if the measure is full up to the seventh line, it must be entered as $\cdot 07$, that is, no inches, no tenths, and seven hundredths. For the sake of clearness, it has been found necessary to lay down an invariable rule that there shall always be two figures to the right of the decimal point. If there be only one figure, as in the case of one-tenth of an inch (usually written $\cdot 1$) a cypher must be added, making it $\cdot 10$. Neglect of this rule causes much inconvenience. All columns should be cast *twice*—once up and once down, so as to avoid the same error being made twice. When there is no rain, a line should be drawn rather than cyphers inserted.

XI.—CAUTION.—The amount should always be written down before the water is thrown away.

XII.—SMALL QUANTITIES.—The unit of measurement being $\cdot 01$, observers whose gauges are sufficiently delicate to show less than that, are, if the amount is under $\cdot 005$, to throw it away, if it is $\cdot 005$ to $\cdot 010$ inclusive, they are to enter it as $\cdot 01$.

XIII.—ABSENCE.—Every observer should train some one as an assistant ; but where this is not possible, instructions should be given that the gauge should be emptied at 9 a.m. on the 1st of the month, and the water bottled, labelled, and tightly corked, to await the observer's return.

XIV.—HEAVY RAINS.—When very heavy rains occur, it is desirable to measure immediately on their termination, and it will be found a safe plan after measuring to return the water to the gauge, so that the morning registration will not be interfered with. Of course if there is the slightest doubt as to the gauge holding all that falls, it must be emptied, the amount being *previously* written down.

XV.—SNOW.—In snow three methods may be adopted—it is well to try them all. (1) Melt what is caught in the funnel by adding to the snow a previously ascertained quantity of warm water, and then

deducting this quantity from the total measurement, enter the residue as rain. (2) Select a place where the snow has not drifted, invert the funnel, and turning it round, lift and melt what is enclosed. (3) Measure with a rule the average depth of snow, and take one-twelfth as the equivalent of water. This being a very rough method, is not to be adopted if it can be avoided. Some observers use in snowy weather a cylinder of the same diameter as the rain gauge, and of considerable depth. If the wind is at all rough, all the snow is blown out of a flat-funnelled rain gauge. Snowdon pattern gauges are much the best.

XVI.—OVERFLOW.—It would seem needless to caution observers on this head, but as not a year passes in which some of our observers do not allow it to happen, it is necessary to call attention to the fact that there does not seem to be any part of the British Isles where 4 inches may not fall in 24 hours. Therefore it is not desirable to purchase any new gauge of which the capacity is less than four inches.

XVII.—SECOND GAUGES.—It is desirable that observers should have two gauges, and that one of them should be capable of holding eight inches of rain. One of the gauges should be registered daily, the other weekly or monthly as preferred, but always on the 1st of each month. By this means a thorough check is kept on accidental errors in the entries, which is not the case if *both* are read daily.

XVIII.—DEW AND FOG.—Small amounts of water are at times deposited in rain gauges by fog and dew, they should be added to the amount of rainfall, because (1) they “tend to water the earth and nourish the streams; and not for that reason only, but (2) because in many cases the rain gauges can only be visited monthly, and it would then obviously be impossible to separate the yield of snow, rain, &c.; therefore, for the sake of uniformity, all must be taken together.”

XIX.—DOUBTFUL ENTRIES.—Whenever there is the least doubt respecting the accuracy of any observation, the entry should be marked with a ?, and the reason stated for its being placed there.

XX.—BREAKAGE.—The Editor has no desire to supply rain gauges or glasses, or in any way to undertake, or interfere with, that which is the business of Opticians; but the continuity and permanent accuracy of the records of his correspondents is to him of such importance, that he deems it advisable to announce that any assistance in his power is always at their service.